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TRANSACTIONS

OF THE

MEDICAL ASSOCIATION

OF THE

STATE OF MISSOURI,

AT ITS

FORTY-THIRD ANNUAL SESSION,

HELD AT

MEXICO, MO., MAY 15th, 16th and 17th, 1900.

ST. LOUIS:
NIXON-JONES PRINTING CO.
1901.

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OFFICERS FOR 1900–1901.

PRESIDENT.

U. S. WRIGHT, Fayette.

VICE-PRESIDENTS.

First — D. C. GORE, Marshall.
Second — J. R. FRITTS, Mexico.
Third — R. S. KELSO, Joplin.
Fourth — THOS. CHOWNING, Hannibal.
Fifth — FRANKLIN E. MURPHY, Kansas City.

RECORDING SECRETARY.

B. C. HYDE, Kansas City.

ASSISTANT RECORDING SECRETARY.

W. A. BRAECKLEIN, Higginsville.

CORRESPONDING SECRETARY.

C. R. DUDLEY, St. Louis.

TREASURER.

J. FRANKLIN WELCH, Salisbury.

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STANDING COMMITTEES.

COMMITTEE OF ARRANGEMENTS.

R. E. YOUNG, Jefferson City, Mo.; J. L. THORPE, Jefferson City, Mo.; I. N. ENLOW, Jefferson City, Mo.

COMMITTEE ON CREDENTIALS.

V. Q. BONHAM, New Franklin, Mo.; G. M. NICHOLS, Higbee, Mo.; J. C. CRIST, Lexington, Mo.

COMMITTEE ON SCIENTIFIC COMMUNICATIONS.

EMERY LANPHEAR, St. Louis; JABEZ N. JACKSON, Kansas City; H. W. LATHAM, Lathams Store, Mo.

COMMITTEE ON PROGRESS OF MEDICINE.

C. R. DAY, Mayview; FRANKLIN E. MURPHY, Kansas City; J. H. BAKER, Salisbury.

COMMITTEE ON PROGRESS OF SURGERY.

J. D. GRIFFITH, Kansas City; F. J. LUTZ, St. Louis; C. H. WALLACE, St. Joseph.

COMMITTEE ON PROGRESS OF GYNECOLOGY AND OBSTETRICS.

W. B. DORSETT, St. Louis; JOHN R. HALL, Marshall; R. C. CROWELL, Kansas City.

COMMITTEE ON PROGRESS OF PEDIATRICS.

W. S. ALLEE, Olean; J. F. CAMPBELL, Callas; C. W. DULIN, Kansas City.

COMMITTEE ON MEDICAL EDUCATION.

WOODSEN MOSS, Columbia; C. LESTER HALL, Kansas City; W. G. MOORE, St. Louis.

COMMITTEE ON MEDICAL ETHICS.

GEO. R. HIGHSMITH, Carrollton; A. W. MCALESTER, Columbia; W. R. HAWKINS, Boonsboro.

COMMITTEE ON PUBLICATION.

B. C. HYDE, Kansas City; J. F. LUTZ, St. Louis; H. W. LOEB, St. Louis.

COMMITTEE ON NECROLOGY.

First District, A. B. MILLER, Macon City, Mo.; Second District, G. R. HIGHSMITH, Carrollton, Mo.; Third District, J. P. MARSH, Liberty, Mo.; Fourth District, W. H. BRYANT, Savannah, Mo.; Fifth District, E. W. SHAUFFLER, Kansas City, Mo.; Sixth District, WOODSON HAAS, Columbia, Mo.; Seventh District, H. H. VINKE, St. Charles, Mo.; Eighth District, C. M. RILEY, St. Louis, Mo.; Ninth District, H. H. MUDD, St. Louis, Mo.; Tenth District, J. PITTMAN, Kirkwood, Mo.; Eleventh District, R. E. YOUNG, Jefferson City, Mo.; Twelfth District, R. F. BROOKS, Carthage, Mo.; Thirteenth District, J. E. TEFFT, Springfield, Mo.; Fourteenth District, H. C. SHUTTEE, West Plains, Mo.

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MEMBERS FOR 1900.

NAME.	SOCIETY.	ADDRESS.
ALLEE, G. D.	Central Mo. District	Lamar.
ALLEE, W. S.	John McDowell	Olean.
ALLEN, J. M.	Ex-President	Liberty.
ATKINS, CALVIN.	Clay County	Smithville.
BAKER, J. H. P.	Chariton County	Salisbury.
BAKER, N. F.	Callaway County	Fulton.
BALL, JAMES MOORES.	St. Louis	St. Louis.
BARTLETT, WILLARD.	Microscopical	St. Louis.
BARCLAY, ROBERT.	St. Louis	St. Louis.
BARCK, CARL.	St. Louis	St. Louis.
BASKETT, T. J.	Linton District	Mexico.
BEATTIE, T. J.	Jackson County	Kansas City.
BIGGS, M. O.	Linton District	Bowling Green.
BINNIE, J. F.	Academy of Medicine	Kansas City.
BOGIE, MARCUS A.	Jackson County	Kansas City.
BONHAM, V. Q.	Howard County	New Franklin.
BOULWARE, T. C.	Hodgen	Butler.
BOYD, J. R.	Springfield	Springfield.
BRAECKLEIN, W. A.	Lafayette County	Higginsville.
BRAGG, C. G.	North Mo. District	Huntsville.
BREMER, L.	St. Louis	St. Louis.
BROWN, R. A.	Cedar County	Stockton.
BRUMMALL, J. D.	Chariton County	Salisbury.
BUMGARNER, G. M.	Linton District	Martinsburg.
BURKE, C. L.	Jackson County	Kansas City.
BUSH, F. W.	Marion County	Hannibal.
CAMPBELL, J. F.	Macon County	Callao.
CAVE, E. S.	Audrain County	Mexico.
CHAMBLISS, E. L.	Jackson County	Kansas City.
CHOWNING, THOMAS.	Marion County	Hannibal.
CLARK, C. E.	Jackson County	Kansas City.

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NAME.	SOCIETY.	ADDRESS.
CLINE, W.	Central Mo. District	Appleton City.
COFFIN, G. O.	Jackson County	Kansas City.
COLE, H. B.	Central Mo. District	Sedalia.
CORDIER, A. H.	Jackson County	Kansas City.
CORNETT, W. E.	Linton District	Worcester.
CRANDALL, G. C.	St. Louis	St. Louis.
CRAWFORD, M. J.	Audrain County	Mexico.
CRAWFORD, J. R.	Audrain County	Laddonia.
CRIST, J. C.	Lafayette County	Lexington.
CROWELL, H. C.	Jackson County	Kansas City.
CUPPAIDGE, G. O.	North Mo. District	Moberly.
DAILY, F. W.	Lafayette County	Mayview.
DALLAS, L. W.	North Mo. District	Hunnewell.
DANNAKER, C. A.	Jackson County	Kansas City.
DAY, C. R.	Lafayette County	Mayview.
DEVILBISS, FRANK	John McDowell	Spring Garden.
DIVEN, F. H.	Audrain County	Benton City.
DONELAN, E. A.	St. Joseph	St. Joseph.
DOOLIN, T.	Southwest Mo. District	Ash Grove.
DORSETT, W. B.	St. Louis	St. Louis.
DUDLEY, C. R.	St. Louis	St. Louis.
DULIN, C. W.	Academy of Medicine	Kansas City.
DUNCAN, J. H.	Ex-President	St. Louis.
EDWARDS, J. C.	St. Charles County	O'Fallon.
EVANS, W. H.	Ex-President	Sedalia.
FASSETT, C. W.	St. Joseph	St. Joseph.
FERGUSON, W. J.	Central Mo. District	Sedalia.
FIKENSCHER, OTTO	John McDowell	Lohman.
FOSTER, HAL.	Academy of Medicine	Kansas City.
FRENCH, PINCKNEY	St. Louis	St. Louis.
FRICK, WM	Jackson County	Kansas City.
FRITTS, J. R.	Audrain County	Mexico.
FRYER, B. E.	Jackson County	Kansas City.
FULKERSON, P. S.	Lafayette County	Lexington.
FULKERSON, J. J.	Lafayette County	Higginsville.
FULTON, A. L.	Jackson County	Kansas City.
FUNKHOUSER, R. M.	St. Louis	St. Louis.

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NAME.	SOCIETY.	ADDRESS.
GEIGER, JACOB	Ex-President	St. Joseph.
GENTRY, E. N	Linton District	Sturgeon.
GILMORE, E. E	Hodgen Medical	Adrian.
GOLDSTEIN, M. A	St. Louis	St. Louis.
GORE, D. C	Saline County	Marshall.
GRADWOHL, R. B	St. Louis	St. Louis.
GRIFFITH, J. D	Jackson County	Kansas City.
HAIRE, R. D.	Central Missouri Dist.	Clinton.
HALL, C. LESTER	Ex-President	Kansas City.
HALLEY, GEORGE	Jackson County	Kansas City.
HALL, JOHN R	Saline County	Marshall.
HAWKINS, J. W	Chariton County	Glasgow.
HAWKINS, W. R	Howard County	Boonesboro.
HAMPTON, J. R	Henry County	Shawnee Mound.
HARRIS, J. E	Missouri Valley Dist.	Marshall.
HARRISON, J. F	Linton District	Benton City.
HARWOOD, W. S	Hannibal	Rensselaer.
HEYLMUN, H. H	Jackson County	Kansas City.
HICKERSON, J. T	Linton District	Saling.
HIGHSMITH, G. R	Ex-President	Carrollton.
HILL, ROLAND	St. Louis	St. Louis.
HOWARD, F. A	Saline County	Slater.
HYDE, B. C	Academy of Medicine	Kansas City.
JACKSON, J. N	Academy of Medicine	Kansas City.
JAMES, S. C	Academy of Medicine	Kansas City.
JONES, J. F	N. E. Mo. Dist. Society	Queen City.
JONES, L. J	Clay County	Linden.
KELSO, R. S	Jasper County	Joplin.
KIEFFER, A. R	St. Louis	St. Louis.
KING, R. M	St. Louis	St. Louis.
KNOTT, I	Chariton County	Keytesville.
KUHN, W. F	Jackson County	Kansas City.
LANPHEAR, EMORY	Academy of Medicine	St. Louis.
LATHAM, H. W.	John McDowell	Latham.
LESTER, C. H	Jackson County	Kansas City.
LEWIS, BRANSFORD	St. Louis	St. Louis.

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NAME.	SOCIETY.	ADDRESS.
Lewis, E. R.	Jackson County	Kansas City.
Lewis, Nannie P.	Jackson County	Kansas City.
Loeb, H. W.	St. Louis	St. Louis.
Lofton, E. A.	Audrain County	Laddonia.
Lutz, F. J.	Ex-President	St. Louis.
Lunsford, I. N.	Hodgen	Walker.
Mann, A. N.	Kansas City District	Oak Grove.
Matthews, F. H.	Clay County	Liberty.
Matthews, L. I.	Ex-President	Joplin.
Mayes, O. B.	Linton District	Thompson.
McAlester, A. W.	Ex-President	Columbia.
McCall, W. K.	Linton District	Worcester.
McCandless, W. A.	St. Louis	St. Louis.
McComas, A. R.	Linton District	Sturgeon.
McComas, J. M.	Linton District	Sturgeon.
McGuire, M. S.	Mo. Valley District	Arrow Rock.
Meisenbach, A. H.	St. Louis	St. Louis.
Myer, Jesse S.	St. Louis	St. Louis.
Miller, A. B.	Macon County	Macon.
Mott, John S.	Jackson County	Kansas City.
Moore, W. J.	St. Louis	St. Louis.
Moss, Woodson.	Linton District	Columbia.
Murphy, Franklin E.	Jackson County	Kansas City.
Nichols, George M.	Moberly	Higbee.
Ohmann-Dumesnil, A. H.,	Acad. of Medicine.	St. Louis.
Parrish, J. C.	Linton District	Vandalia.
Pearse, H. E.	Academy of Medicine.	Kansas City.
Pemberton, J. K.	Linton District	Auxvasse.
Popejoy, H. R.	John McDowell	High Point.
Porter, Wm.	Academy of Medicine.	St. Louis.
Postelwait, J. A.	Northwest Mis. Dis.	Tarkio.
Priest, E. L.	Hodgen	Nevada.
Punton, John.	Academy of Medicine.	Kansas City.
Ritter, C. A.	Academy of Medicine.	Kansas City.
Rodes, L. O.	Linton District	Mexico.

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NAME.	SOCIETY.	ADDRESS.
RODES, N. R.	Linton District	Mexico.
RODES, W. R.	Linton District	Mexico.
ROGERS, J. C.	Jackson County	Kansas City.
ROTHWELL, C. A.	Audrain County	Mexico.
SAWTELL, J. E.	Academy of Medicine.	Kansas City.
SHUTZ, W. H.	Kansas City District	Kansas City.
SEXTON, M. P.	Academy of Medicine.	Kansas City.
SCHATTINGER, CHAS.	St. Louis	St. Louis.
SHELEY, O. C.	Kansas City District	Independence.
SHUCK, LEE J.	Saline County	Nelson.
SHUTTEE, H. C.	Southwest Mis. Dis.	Westplains.
SLOAN, R. T.	Academy of Medicine.	Kansas City.
SUMMA, HUGO	St. Louis	St. Louis.
SUTTON, N. E.	Marion County	Blue Ridge.
STRATTON, C. D.	North Mo. District.	Rothville.
TAYLOR, A. M.		New Hope.
THATCHER, J. P.	John McDowell	Bunceton.
THOMPSON, J. H.	Academy of Medicine.	Kansas City.
THOMPSON, W. S.	Howard County	Armstrong.
TOALSON, GEORGE F.	Mexico	Mexico.
TUPPER, P. Y.	St. Louis	St. Louis.
TWYMAN, G. T.	Kansas City District	Independence.
TYREE, W. C.	Academy of Medicine.	Kansas City.
VANDEVENTER, E. D.	Audrain County	Laddonia.
VANEMAN, J. H.	Jackson County	Kansas City.
VARNON, T. C.	Linton District	Mexico.
VAUGHAN, H. C.	Shelby County	Shelbina.
VIEDT, E. J.	Hodgen	Rockville.
WALLACE, C. H.	St. Joseph	St. Joseph.
WARD, MILO B.	Academy of Medicine.	Kansas City.
WELCH, J. FRANKLIN.	Chariton County	Salisbury.
WEYMANN, M. F.	St. Joseph	St. Joseph.
WHEELER, J. F	Saline County	Herndon.
WILKES, B. A.	St. Louis	St. Louis.
WILLIAMS, O. A.	John McDowell	Versailles.
WILSON, C. E.	Academy of Medicine.	Kansas City.

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NAME.	SOCIETY.	ADDRESS.
WITHERSPOON, T. C.	City Hospital Alumni.	St. Louis.
WOOD, N. P.	Kansas City District.	Independence.
WRIGHT, U. S.	Howard County.	Fayette.
YOUNG, D. H.	Callaway County.	Fulton.
YOUNG, R. E.	John McDowell	Jefferson City.

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CONSTITUTION AND BY-LAWS OF THE MEDICAL ASSOCIATION OF MISSOURI.

CONSTITUTION.

ARTICLE I. — TITLE.

This Association shall be called "THE MEDICAL ASSOCIATION OF MISSOURI."

ARTICLE II. — OBJECTS.

The objects of the Association are to constitute a representative body of the regular medical profession of the State of Missouri, which may advance the interest and encourage the unity and harmonious action of the entire profession throughout this State; to suppress empiricism as much as practicable; to restrict the privilege of practicing the profession of medicine to qualified graduates; to develop talent, stimulate medical inventions and discoveries, and to maintain our rights and immunities as medical men.

ARTICLE III. — MEMBERS.

The members of this Association shall consist of three classes, to wit: First, delegates; second, honorary members; third, members by invitation.

ARTICLE IV. — OFFICERS.

The officers of this Association shall be a president, five vice-presidents, a recording secretary and an associate recording secretary, and a treasurer.

ARTICLE V. — STANDING COMMITTEES.

The following standing committees, composed of three members, of which the first named is chairman, shall be nominated at each annual meeting, to wit:—

1. A Committee of Arrangements.
2. A Committee on Credentials.
3. A Committee on Scientific Communications.
4. A Committee on the Progress of Medicine.
5. A Committee on the Progress of Surgery.
6. A Committee on the Progress of Gynecology and Obstetrics.
7. A Committee on the Progress of Pediatrics.
8. A Committee on Medical Education.
9. A Committee on Medical Ethics.
10. A Committee on Publication.
11. A Committee on Necrology.

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Article VI. — Amendments.

No alteration or amendment shall be made in any of the articles of this Constitution, except at the annual meeting next subsequent to that at which such alteration or amendment may have been proposed, and then only by the concurrence of three-fourths of the members in attendance.

BY-LAWS.

Article I. — Members.

Section 1. Delegates from accredited local or district medical societies.

Sec. 2. Honorary members shall consist of those who have served as president of the Association, with such distinguished men of the profession, not resident of the State, who shall be elected by unanimous vote at a regular meeting of the Association.

Sec. 3. Members by invitation shall consist of reputable practitioners who may be deemed worthy of the compliment and elected by a vote of the Association.

Sec. 4. Any physician, after having been admitted as a member of this Association, shall upon presentation of credentials, properly approved, retain his membership by the payment of an annual fee of four dollars at each annual meeting as long as he is in good standing in the profession.

Sec. 5. The annual dues to be paid by all members (other than honorary members) shall be four dollars, and each member shall be entitled to a copy of the Transactions. Any physician who is not a member, who shall remit one dollar to the treasurer on or before the annual meeting shall be entitled to a copy of the Transactions

Sec. 6. All classes of members shall be entitled to equal privileges in the discussions of the Association. Honorary members who are non-residents of the State, and members by invitation, shall not be eligible to office, nor allowed to vote, nor be expected to contribute to the funds of the Association.

Sec. 7. If a member of this Association die, it shall be the duty of the presiding officer of the nearest medical society in the district in which he resided to notify the members of Committee on Necrology, whose duty it is to prepare a suitable biographical sketch.

Sec. 8. The Recording Secretary shall keep a list of the living members of this Association, so that at each annual meeting, if, when the roll is called, it be ascertained that any member has died during the year, the President may refer such name to Committee on Necrology, or appoint some suitable person to prepare a biographical sketch of said deceased member.

Article II. — Elections.

Section 1. The election of officers of the Association shall occur annually, excepting the Recording Secretary, who shall hold office for a

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period of five years, unless sooner removed for cause by a vote of the Association. Elections shall be by ballot, a majority electing.

SEC. 2. All officers shall be elected on the last day of the session, at such hour as the Association shall direct, and they shall be inducted into office immediately before the final adjournment.

SEC. 3. The election of President shall be made in open session, by ballot or otherwise, as the Association shall at the time direct.

SEC. 4. All the other officers shall be elected after nominations have been presented by the Committee on Nominations.

ARTICLE III. — DUTIES OF OFFICERS.

SECTION 1. The President shall preside at the meetings, preserve order, and perform all other duties that custom and parliamentary usage may require, countersign orders on the Treasurer, and deliver an annual address to the Association before retiring from office.

SEC. 2. The Vice-Presidents, when called upon, shall assist the President in the performance of his duties, and during the absence or at the request of the President, one of them shall officiate in his place.

SEC. 3. The Recording Secretary shall keep a full and accurate record of the proceedings, shall serve as a member of the Committee on Publication, and preserve the archives and unpublished transactions of the Association.

SEC. 4. The assistant recording secretary shall perform such duties as may be required in the assistance of the recording secretary and in the absence of this officer shall fulfill his duties.

SEC. 5. The treasurer shall collect and have immediate charge and management of the funds of the Association, and hold them subject to its disposal. At each annual meeting he shall present a written report setting forth the amount of moneys received and disbursed and for what purposes. At the expiration of, or on vacating his office, he shall deliver to his successor all moneys and all property belonging to the Association for which he is responsible. He shall file a bond with the recording secretary, on or before assuming his duties, equal in amount to the liabilities of his office, indorsed by two sureties approved by the president.

SEC. 6. *Council of Administration.* — The President, the Vice-President and the Secretaries of the Association shall constitute a Council of administration, who shall be charged with the duty, so far as practicable, of working up an interest in the meetings, of collecting information and statistics with regard to other societies within the State and other State medical organizations, and generally to take such action as may in their opinion be for the good of the Association, and to report the same each year.

ARTICLE IV. — MEETINGS.

SECTION 1. The regular meetings of this Association shall be held annually at any place within the State of Missouri that may have been selected by the Association, and shall commence on the third Tuesday in

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May — changeable, however, at the option of the President and Recording Secretary, when such time conflicts with the meeting of the American Medical Association.

SEC. 2. The regular meetings of the Association may remain in session three days, if a sufficiency of business demands it.

ARTICLE V. — DUTIES OF STANDING COMMITTEES.

SECTION 1. The Committee on Arrangements shall provide suitable accommodations for the annual meeting, and shall take all measures to secure the attendance of members, by publication or otherwise.

SEC. 2. The Committee on Credentials shall examine and report upon the credentials of members.

SEC. 3. The Committee on Scientific Communications shall have charge of all scientific communications made to the Association. It shall be their duty to receive from members the titles of such papers as may be proposed to the Association, and to take such other measures as may seem to them best adapted to secure interesting and original communications upon scientific subjects connected with medicine. Such communications must be read before the Association, in full or in abstract, before being presented to the Committee on Publication. They shall also arrange the order in which such communications shall be presented to the Association.

SEC. 4. The Committee on the Progress of Medicine.

SEC. 5. The Committee on the Progress of Surgery.

SEC. 6. The Committee on Gynecology and Obstetrics.

SEC. 7. The Committee on the Progress of Pediatrics.

SEC. 8. The Committee on Medical Education shall prepare an annual report on the general status of medical education in the State of Missouri, with such other matter as they may deem worthy of special consideration in reference to medical education and the reputable standing of the profession.

SEC. 9. The Committee on Medical Ethics shall take cognizance of any matter relating to their department.

SEC. 10. The Committee on Publication, of which the recording and the assistant recording secretary and the outgoing recording secretary shall, *ex-officio*, constitute a part, shall examine all papers that may be referred to it by the Association, and shall present a report, during the meeting at which the said papers are read, stating what papers, in the opinion of the committee, should be published in the Association's Transactions. The committee shall, furthermore, prepare for the press, and publish and distribute such of the proceedings and memoirs of the Association as may be ordered published.

SEC. 11. The Committee on Necrology shall consist of one member for each Congressional district in the State. They shall remain members of said committee for a period of five years; and it shall be the duty of the members of said committee to prepare suitable biographical sketches of all

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deceased members, and to transmit the same to the presiding officer at the annual meeting. It shall be the duty of the Committee on Publication to print said biographies in the Transactions.

ARTICLE VI. — DISCIPLINE OF MEMBERS.

SECTION 1. In case of a violation of the provisions of the Constitution or the Code of Ethics adopted by the Association, and upon the fact being established to the satisfaction of two-thirds of the members in attendance at the meeting, the individual or individuals thus offending shall be expelled.

ARTICLE VII. — FUNDS AND APPROPRIATIONS.

SECTION 1. The funds of the Association shall be raised by an annual assessment of four dollars on each member and by individual voluntary contributions.

SEC. 2. The funds thus raised may be appropriated for defraying the expenses of the annual meetings; for publishing the proceedings, memoirs and Transactions of the Association; for enabling the standing committees to fulfill their respective duties, conduct their correspondence, and procure the material for the completion of their stated annual reports; for the encouragement of scientific investigations by prizes and awards of merit; and for such other purposes as the association may from time to time direct.

ARTICLE VIII. — CODE OF ETHICS.

SECTION 1. The Code of Ethics of the American Medical Association is hereby adopted by this Association, and shall have the full force and effect of any article of the Constitution.

ARTICLE IX. — ORDER OF BUSINESS.

The order of business for each meeting shall be arranged by the Committee of Arrangements and the Committee on Scientific Communications (subject to the proceedings of other existing By-Laws), and announced on the printed programme of the meeting, subject to alteration at the time of meeting by a majority vote of those present.

ARTICLE X.

SECTION 1. No paper shall be received by the Medical Association of Missouri, or published in its Transactions, unless such paper is ready to be placed in the hands of the Secretaries immediately after reading the same.

ARTICLE XI. — AMENDMENTS.

SECTION 1. No alteration or amendment in the By-Laws shall be made except at a regular meeting and by a two-thirds vote of the members present.

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MINUTES OF THE FORTY-THIRD ANNUAL MEETING OF THE MEDICAL ASSOCIATION OF MISSOURI.

MORNING SESSION, FIRST DAY, MAY 15, 1900.

The Forty-third Annual Meeting of the Medical Association of Missouri was called to order in the Opera House at Mexico, Mo., at 9: 30 a. m., by Dr. J. Rule Fritts, Chairman of the Committee on Arrangements. The Rev. Hanna delivered the invocation.

He was followed by the Hon. J. O. Williams, who delivered the Address of Welcome, to which response was made by Dr. A. W. McAlester.

The President, Dr. Walter B. Dorsett, was introduced, and made a few remarks.

The following letters from the St. Louis Medical Society were read and referred to the Committee on Ethics, composed of Drs. A. B. Miller, A. W. McAlester, and Geo. R. Highsmith: —

ST. LOUIS, May 8, 1900.

W. B. Dorsett, M. D., President Missouri Medical Association:

DEAR DOCTOR — In anticipation of my answer to yours of March 12, ult., the following resolution was adopted by the St. Louis Medical Society, to wit: "*Resolved*, That the President, Vice-president, Treasurer, and Secretary of the St. Louis Medical Society, as a committee, present a statement to the Missouri Medical Association, elucidating its present status, its ability and desire to properly discipline its members."

Although "authority to discipline its members" was vested in the Society under its original Charter by its Constitution and By-Laws (in which opinion eminent legal talent concurred), it was, however, deemed expedient to specifically amend the Charter of this Society in order that no question of this right and power might again arise — so accordingly a pro forma decree of said amendment was asked for and in April was granted by the Court.

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Thus it appears that this Society has acted in good faith and is willing and able to discipline its members.

Very sincerely yours,

ROBT. M. FUNKHOUSER,

President St. Louis Medical Society of Missouri.

ST. LOUIS, May 8, 1900.

W. B. Dorsett, M. D., President Mo. Medical Ass'n.

DEAR DOCTOR: By a motion of the St. Louis Medical Society of Missouri, the undersigned members of the said society were appointed a committee to present a statement to the Missouri Medical Association, elucidating its present status, its ability and desire to properly discipline its members. An amendment to the charter specifically authorizing the St. Louis Medical Society of Missouri to discipline its members was granted in April by the court.

Respectfully,

ROBT. M. FUNKHOUSER, President.
F. L. HENDERSON, Vice-President.
A. R. KIEFFER, Treasurer.
C. R. DUDLEY, Secretary.
Committee.

Dr. Loeb moved adoption of rules of order as stated by the Committee on Scientific Communications.

The Association proceeded to the consideration of the scientific programme.

Dr. J. H. Thompson of Kansas City read a paper entitled "Report on Ophthalmology and Otology."

Dr. C. Barck of St. Louis read a paper entitled "Intra-Ocular Tumors" and presented specimens illustrating his subject.

Dr. M. F. Weyman of St. Joseph read a paper entitled "Total Ciliectomy."

These papers were discussed by Drs. B. E Fryer of Kansas City, J. M. Ball of St. Louis.

The Committee on Ethics made a report as follows:—

REPORT OF COMMITTEE ON ETHICS.

Pres., Mo. State Med. Assn.

Your committee, to whom was reported the report of the St. Louis Medcal Society with reference to their ability to discipline its members, having

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examined the report and finding that the St. Louis Society has complied with the demands of this society, desires to subscribe a favorable report and recommend that delegates from the St. Louis Society be admitted to membership. Respectfully submitted,

A. B. MILLER,
GEO. R. HIGHSMITH,
A. W. MCALESTER.

It was moved and carried to adopt this report.

Dr. H. W. Loeb of St. Louis read a paper entitled "Limitations of the Laryngologist in the General Treatment of Nose and Throat Diseases."

Discussed by Dr. B. E. Fryer, of Kansas City.

Dr. Robert Barclay of St. Louis read a paper entitled, "Cases of Chronic Deafness from Catarrh Relieved by Tympanic Resection."

Discussed by Drs. J. H. Thompson, B. E. Fryer, and M. F. Weyman.

Moved and carried to send telegrams of greeting to the Iowa Medical Society, in session at Des Moines; the Illinois Medical Society, in session at Springfield, and the Arkansas Medical Society, in session at Fayetteville.

Adjourned.

AFTERNOON SESSION — FIRST DAY.

Meeting called to order at 2:30 by the President. Minutes of morning session read and approved.

The following letter was read: —

BRATTLEBORO, Vt., January 5, 1900.

W. B. Dorsett, M. D., President Missouri State Medical Association.

DEAR DOCTOR: The record of the Forty-eighth Annual Meeting of the American Medical Association, held in Philadelphia, in June, 1897, shows that your State Society pledged $2,000 to the "Rush Monument Fund."

An examination of the book of the late treasurer, Dr. Geo. H. Rohé, does not show that any payment has yet been made. Thinking that this

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pledge might have escaped the memory of the members of your society, it is thought wise to call your attention to it in order that they might redeem it at an early date.

The obligation resting on the profession has been so often urged by Dr. Gihon that it is unnecessary to dwell upon it.

In behalf of the Committee, I am Yours truly,

HENRY D. HOLTON,
Treasurer Rush Monument Fund.

P. S. — Will you be kind enough to send me the name and address of the member of the "Rush Monument Committee" from your State? — H. D. H.

The Secretary was instructed to notify the Treasurer of the Rush Monument Fund that the Medical Association of Missouri had not authorized any one to pledge any amount for this purpose, and that whoever did so had acted without authority, and that this Association declared its refusal to consider the above as obligatory, and that no attempt would be made to comply with the request of the "Fund" Committee.

The following letter was read:—

W. B. Dorsett, Pres., Mo. State Med. Ass'n, St. Louis, Mo.:

At the 25th annual meeting of the Southeast Missouri Medical Association which convened in Poplar Bluff, Missouri, May 1st, 1900, the committee appointed to draft resolutions in support of the demands of the State Medical Association, relative to needed medical legislation in this State, reported the following which was read and adopted:—

The Southeast Medical Association in annual session assembled, May 2d, 1900, believing that the time has come when the State of Missouri should take its stand with surrounding States in the matter of legislation controlling medical practice in the State;

Therefore, be it *Resolved*, That we regret exceedingly that our State has taken a retrograde movement on this all-important subject and must necessarily occupy a position alongside those States least progressive in this necessary work.

Resolved, That we take this occasion to express our deliberate convictions that an imperative duty lies with the medical profession to press the subject of medical legislation in such a way as to secure acceptable and well defined laws that will protect the public from imposition in this regard.

Therefore, be it *Resolved*, That the Southeast Missouri Medical Association pledges its cordial support to all efforts of the State Medical Association to secure this end.

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Resolved, That a copy of the resolutions be spread upon the minutes of this meeting, and a copy furnished the State Medical Association.

Signed: L. T. HALL, Chairman.
M. ROSENTHAL,
VICTOR CADWELL.

The question of admitting Dr. Chowning of Hannibal without credentials from a local society, upon the indorsement of members now present, was raised. Dr. J. D. Griffith moved that this be referred to the Committee on Credentials.

Seconded.

The motion was amended to the effect that the Committee on Credentials be instructed to receive Dr. Chowning.

Carried.

The question of admitting members without credentials was discussed. The President ruled that credentials from a local society are necessary.

A paper, "Report on the Bacteriology of Scarlet Fever," was read by Dr. R. B. H. Gradwohl of St. Louis.

A paper, "A Case of Idiopathic Yellow Atrophy of the Liver," was read by Dr. G. C. Crandall of St. Louis.

A paper, "The Use of Normal Salt Solution and Venesection in Croupous Pneumonia," was read by Dr. Wm. Porter of St. Louis.

The above papers were discussed by Drs. Myer, Crandall, Barclay, Thatcher and Gradwohl.

Moved and carried that the courtesy of the floor be extended to all visiting gentlemen.

A paper, "What Not to Do in the Treatment of Diseases of the Ear, Nose and Throat," was read by Dr. M. A. Goldstein of St. Louis.

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Discussed by Drs. Clark, Loeb, Crandall and Stratton. Discussion closed by Dr. Goldstein.

Paper entitled "Progress of Medicine," was read by Dr. J. D. Brummall of Salisbury.

Discussed by Drs. Porter, Campbell, Shuttee and Crandall.

Adjourned.

EVENING SESSION, MAY 15.

Meeting called to order by the President.

The Committee on Credentials made a report showing 113 members in attendance.

Moved and carried that the Association go into executive session and that doorkeepers be appointed.

On resuming open session, Dr. A. H. Ohmann-Dumesnil of St. Louis, read a paper entitled, "Two Cases of Chancre of the Groin."

A paper entitled, "Some Observations of Secondary Syphilis," was read by Dr. William Frick of Kansas City.

Moved and carried to make discussion of these papers first order of business at next morning session.

Adjourned.

MORNING SESSION, MAY 16.

Meeting called to order by the President at 9 a. m.

The papers of Drs. Dumesnil and Frick were discussed by Drs. Dumesnil, Frick and Binnie.

A paper entitled "Presentation of a New Ureter-Cystoscope," was read by Dr. Bransford Lewis of St. Louis.

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The report of the Commiteee on Publication was read as follows: —

REPORT OF PUBLICATION COMMITTEE.

Bids were received from a number of firms, according to the following specifications: —

"Paper S. & S. C. 25 by 38, toned, 70 lbs. No. 1 Book for each 16 page form.....

Composition for each page of small pica.....

Composition for each page of brevier.....

Press work for each form of 16 pages or less.....

Alteration on proof, from copy, per hour.....

Binding 215 copies in board, bench sewed, green silk cloth, extra English, title and year stamped on back in gold for.....

Wrapping entire edition in heavy Manilla paper for mailing.....

All work to be first-class and entire job to be completed and delivered within six weeks after the letting of contract. Each day of delay over the above will call for a forfeiture of ten dollars.

Bids according to the above specifications will be opened at Room 603 Altman Building, Kansas City, Mo., on June the 12th, 1899, and contract awarded to the lowest bidder."

The bid of Burd and Fletcher being the lowest, the contract was awarded to them. Owing to the deficiency in the treasury, it was thought best to limit the number of copies to 215. There remain undistributed 10 copies. The treasurer was unable to pay the full amount of the publishers' bill, and there remains an amount due them of $357.32.

B. C. HYDE,
JOHN PUNTON,
C. W. DULIN,
Committee on Publications.

The President appointed an Auditing Committee composed of Drs. F. J. Lutz, G. R. Highsmith and C. Lester Hall.

A paper entitled "Smallpox; Its Prevention and Treatment," was read by Dr. R. S. Kelso of Joplin.

A paper entitled "Report on Medical Education," was read by Dr. J. M. Allen of Liberty.

A paper entitled "Quackery *vs.* Medical Ethics," was read by Dr. C. R. Day of Mayview.

The above papers were discussed by Drs. W. S. Allee, T. C. Boulware, Van Eman, G. R. Highsmith, H. C. Shuttee,

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E. E. Gilmore, S. C. James, C. H. Wallace, R. E. Young, J. D. Griffith, Shattinger and Viedt. Discussion closed by Dr. Kelso.

Dr. F. J. Lutz made for the Auditing Committee a verbal report, stating that the bills examined were such as were usually met with in the work of the Association, and recommending that the bills be paid.

Moved and carried to adopt this report.

The President appointed the Committee on Nominations as follows: —

C. H. Wallace of St Joseph.
W. F. Kuhn of Kansas City.
F. J. Lutz of St. Louis.
L. I. Matthews of Joplin.
V. Q. Bonham of New Franklin.

Adjourned.

AFTERNOON SESSION — SECOND DAY.

Meeting called to order by the President at 2 p. m.

Committee on Necrology made a report as follows: —

Committee on Necrology beg leave to submit the following report: —

Revised Committee.

1st District. A. B. Miller, Macon.
2d District. G. R. Highsmith, Carrollton.
3d District. J. P. Marsh, Liberty.
4th District. W. H. Bryant, Savannah.
5th District. E. W. Schauffler, Kansas City.
6th District. T. C. Boulware, Butler.
7th District. Woodson Moss, Columbia.
8th District. R. E. Young, Jefferson City.
9th District. H. H. Vinke, St. Charles.
10th District. J. Pittman, Kirkwood.
11th District. Paul Y. Tupper, St. Louis.
12th District. W. A. McCandless, St. Louis.
13th District. J. J. Norwine, Bismarck.
14th District. H. C. Shuttee, West Plains.
15th District. L. I. Matthews, Joplin.

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The following deaths have been reported: —

2d District. W. A. Tull, A. L. McCorkle, Carrollton; Dr. Willhite, Salisbury.

5th District. A. B. Sloan, S. S. Todd, T. B. Thrush, C. W. Adams, Kansas City.

9th District. W. B. Adams, Montgomery City; T. P. Rothwell, Mexico.

10th District. H. H. Mudd, F. D. Mooney, J. C. Mulhall, T. O. Summers, St. Louis.

15th District. R. F. Brooks, Carthage.

Members are requested to send to Secretary Hyde names of deceased members not given above.

Your Committee recommend that short biographical notices of deceased members be furnished by the proper member of Committee on Necrology for publication in Transactions and that a copy of Transactions containing such notice be sent to family of deceased.

A. B. MILLER,
Chairman.

H. C. SHUTTER,
Secy.

A telegram of greeting from the Iowa Medical Association was read, and the following from the Arkansas Medical Association: —

FAYETTEVILLE, ARK., May 16, 1900.

To Dr. B. C. Hyde, Secretary Medical Society of Missouri.

The Arkansas Medical Society begs leave to acknowledge the courteous greeting from the Medical Society of her sister State. She extends to you the right hand of fellowship and the wish that your meeting may be a profitable and pleasant one.

F. VINSENHALER,
Secretary, Arkansas Medical Society.

The following communication from the State Anatomical Board was read by Dr. Woodson Moss of Columbia: —

MEXICO, MO., May 16, 1900.

Since medical education is at present in this State seriously embarrassed by the number of *post-mortem* operations of one kind or another which are made upon the unclaimed dead in certain of our public institutions, so that of the bodies received in the medical colleges for dissection but a small number are of use;

And since the Anatomical Law is a statute and has precedence over the ruling of local boards of health;

Be it Resolved, That the local agents of the State Anatomical Board assert all of their rights and privileges in regard to the unclaimed dead of this State.

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After announcements by Dr. J. R. Fritts, Chairman of the Committee on Arrangements, Dr. W. A. McCandless of St. Louis read a paper entitled "Report on Progress of Surgery."

Dr. G. R. Highsmith of Carrollton read a paper entitled "What is the Value of Trauma as an Etiologic Factor in Chronic Tubercular Disease of Bone?"

Dr. T. C. Witherspoon of St. Louis read a paper entitled "Carcinoma of the Cecum in a Young Adult."

Dr. A. J. Steele of St. Louis read a paper entitled "Coxa Vara."

These papers were discussed by Drs. Meisenbach, Funkhouser, Binnie, Punton, Steele, Kieffer, Crowell, Bartlett, and Halley.

Dr. Hugo Summa of St. Louis made a plea for the presentation of rare or interesting pathologic specimens by the members of this Association at the meeting of the American Medical Association at Atlantic City, N. J., June 5–8, 1900.

Dr. C. Shattinger of St. Louis read a paper entitled "Physiology of the Bile."

Dr. Hugo Summa of St. Louis read a paper entitled, "Pathology of Gall-Stones."

Dr. W. G. Moore of St. Louis read a paper entitled, "Symptomatology and Diagnosis of Gall-Stones."

These papers were discussed by Drs. J. D. Griffith, P. Y. Tupper, J. S. Myer, A. H. Cordier, J. H. Duncan, J. M. Allen, A. H. Meisenbach, H. E. Pearse, R. M. Funkhouser, R. T. Sloan, W. A. McCandless, and H. C. Crowell. Discussion closed by Drs. Shattinger and Summa.

Adjourned.

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EVENING SESSION, MAY 16.

Meeting called to order by Vice-president Binnie.

Dr. W. F. Kuhn moved to make election of officers, special order for 10 a. m. at next morning session.

Carried.

Moved and carried that report of Committee on Medical Legislation be made special order of business immediately after President's address.

The President, Dr. Walter B. Dorsett, then delivered the annual address.

Moved and carried that President's address be referred to the Committee on State Medicine.

Dr. E. L. Priest of Nevada then read the report of the Committee on State Medicine.

It was moved and carried that the President appoint the Committee recommended by Dr. Priest, who should report the next morning.

The President appointed Wm. Evans, Sedalia; W. S. Allee, Olean; Woodson Moss, Columbia; George Halley, Kansas City; R. M. Funkhouser, St. Louis; F. J. Lutz, St. Louis.

A paper entitled "Appendicitis: When and How to Operate," was read by Dr. A. H. Meisenbach of St. Louis.

Adjourned.

MORNING SESSION — THIRD DAY.

Meeting called to order by the President.

The Priest Committee made a report as follows, which was adopted:—

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The Committee appointed to consider the report of the progress of State medicine, by Dr. E. L. Priest, report as follows:

The Committee recommends the appointment of the following five men who shall be known as "A Special Committee on Medical Legislation:" —

1. Dr. E. L. Priest of Nevada.
2. Dr. D. C. Gore of Marshall.
3. Dr. A. W. McAlester of Columbia.
4. Dr. Frank Lutz of St. Louis.
5. Dr. Herman E. Pearse of Kansas City.

This Committee shall be instructed to take such steps as may be deemed necessary to secure the passage by the General Assembly of the State of Missouri of the medical bills adopted by the Medical Association of Missouri.

This Committee also advises the adoption of the following resolution: —

WHEREAS, It is apparent that the present laws of the State of Missouri are insufficient and inadequate to protect the life, health and property of the community; therefore be it

Resolved, That the General Assembly be and is hereby petitioned to enact the bills herewith presented and indorsed by the Missouri Medical Association at its annual meeting at Mexico, May 16, 1900; and

Resolved, That every medical society in the State be requested to join in such request and indorsement.

Signed: W. H. EVANS, Chairman.
H. E. PEARSE, Sec'y.
E. L. PRIEST,
W. S. ALLEE,
WOODSON MOSS,
FRANK LUTZ,
R. M. FUNKHOUSER,
Committee.

AN ACT Creating a State Board of Health, and Repealing Chapter —— of the Revised Statutes of 1899.

Be it enacted by the General Assembly of the State of Missouri, as follows:

SECTION 1. The Governor, by and with the consent of the Senate, shall appoint seven reputable physicians, who shall constitute a board which shall be styled "The State Board of Health of Missouri." The members so appointed shall hold their office for a term of four years or until their successors are appointed and qualified; provided, however, that in the first appointment under this act three members shall hold for two years and four members for four years and thereafter all appointments shall be for four years. All vacancies occurring in the board shall be filled by the Governor, and when made when the Senate is not in session shall be subject to confirmation at the next ensuing session of the Senate.

SECTION 2. The Board of Health hereby created shall be a body corporate under the name of the "State Board of Health of Missouri," and by that name may sue and be sued, adopt a seal and perform such other acts as are

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usually performed by public corporations, including the adoption of by-laws, not in conflict with this act and the general laws of this State.

SECTION 3. It shall be the duty of the State Board of Health to appoint two legally qualified physicians in each and every county in this State, who, together with the County School Commissioner and Presiding Judge of the county court, the last two named to be ex-officio members, shall constitute a local board of health. Such local board shall be known as the "—— County Board of Health" naming the county in which they are appointed to act. The members of the local board shall be commissioned by the President and Secretary of the State Board and the members who are physicians shall hold office for four years; provided, that in the first appointment, one of said physicians shall hold for two years, the other for four years. The various local boards so appointed shall organize by the election of a chairman and secretary from their members. The county boards shall meet at least twice in each year, and shall make report to the State Board whenever any contagious or infectious disease prevails in or threatens their respective counties. The members of the local board shall receive no compensation for their services unless they are called on to act by the State Board in times of epidemics or threatened epidemics, and then they shall receive such compensation as shall be deemed reasonable by the State Board. When called on to act by the State Board under such circumstances the local board shall possess and exercise the same powers in regard to quarantining as are hereby conferred on the State Board of Health, and may enforce all rules and regulations of the State Board in that respect.

SECTION 4. The members appointed on the State Board shall be physicians in good standing, of recognized professional and scientific knowledge, and graduates of reputable medical schools, and they shall have been residents of the State for at least five years next preceding their appointment; provided, that in the appointment made there shall be no discrimination made against the different schools of medicine that are recognized as reputable by the laws of the State; and provided further, that no more than three of the members so appointed shall be connected professionally with any medical college; neither shall more than four of the members so appointed belong to the same political party.

SECTION 5. The State Board of Health shall have general supervision over the health and sanitary interests of the citizens of the State. It shall be their duty to recommend to the General Assembly of the State such laws as they deem necessary to improve and advance the sanitary condition of the State; to recommend to the municipal authority of any city, public schools, or to the county court of any county, the adoption of any rules that they may deem wise or expedient for the protection and preservation of the health of the citizens thereof.

SECTION 6. Whenever the State Board of Health shall be satisfied that any malignant, contagious or infectious disease exists in any city, district or part of the country to such an extent as to endanger the lives of the inhabitants of any part of the State of Missouri having direct communica-

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tion with such infected city, district or part of the country, said board shall have power, by a majority vote and consent of the Governor, to establish quarantine regulations against such infected city or district, and may determine and regulate to what extent and by whom any communication or business transaction with such infected city or district may be had, and establish such rules and regulations as may be deemed necessary to prevent the introduction and spread of the disease; said Board is hereby empowered to call upon any executive officer of the State to enforce such rules and regulations, and it shall be the duty of all public officers, sheriffs and constables and other executive officers of the State to assist the State Board of Health to carry out the provisions of this act. Said Board is also empowered to appoint a State Bacteriologist and Pathologist, and to define his duties and compensation.

SECTION 7. Whenever the State Board of Health shall declare that any malignant, infectious of contagious disease is epidemic in any portion of the country or the State of Missouri, they shall immediately, or as soon thereafter as possible, give notice to that effect to the citizens of the State, and also give public notice of the rules and regulations adopted by them for the enforcement of quarantine in infected and other districts, and to take such steps and adopt such measures as they deem necessary to prevent the introduction of such disease.

SECTION 8. Any person or persons failing, after notice, or refusing to comply with the quarantine rules and regulations of the State of Missouri, as established by the State Board of Health, or any person or persons resisting by force the enforcement of the quarantine regulations of the State of Missouri, established and approved as aforesaid, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be fined not less than ten nor more than five hundred dollars for each offense.

SECTION 9. The meetings of the State Board shall be in April and October of each year, and at such other times as the Board shall deem expedient. The meeting in April of each year shall be held in the city of Jefferson, and four members shall constitute a quorum. They shall choose from their number a President, Vice-president and a Secretary, and they may adopt rules and by-laws for their government.

SECTION 10. The Secretary shall perform such duties as may be prescribed by the Board and this act; he shall receive a salary which shall be fixed by the Board; he shall also receive his traveling and other expenses in the performance of his official duties. The members shall receive as compensation for their services the sum of ten dollars per day and actual expenses for attendance at the regular semi-annual meetings. The members shall also be allowed their actual expenses when traveling in the performance of the business of and at the direction of the Board. All sums herein provided to be paid, including the salary of the Secretary, shall be paid out of the appropriation that may be made by the Legislature on presentation to the State Auditor of the certificate of the President of the Board of Health.

SECTION 11. The State Board of Health shall organize within thirty days

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after the appointment of the members thereof. The President of the Board shall have authority to administer oaths, and the Board shall have authority to take testimony in all matters relating to their duties and powers. In selecting places to hold their meetings they shall, as far as possible, accomodate the different sections of the State, and due notice shall be published of their stated and called meetings. All certificates issued by them shall be signed by at least five members of the Board.

SECTION 12. It shall be the duty of the Board of Health to make an annual report, through their Secretary or otherwise, in writing, to the Governor of this State, on or before the first of January of each year, and such report shall include so much of the proceedings of the Board, and such information concerning vital and mortuary statistics, such knowledge respecting disease, and such instructions on the subject of hygiene as may be thought useful by the Board for dissemination among the people, with such suggestions as to legislative action as they may deem proper.

SECTION 13. All fees collected by the State Board of Health under any law of this State shall be paid into the State Treasury.

SECTION 14. Chapter —— of the Revised Statutes of 1899 is hereby repealed.

The report of the Committee on Revision of the Constitution and By-laws, made at the last annual meeting, was adopted.

Dr. Priest made a report of the finances of his committee as follows: —

NEVADA, MO.,

E. L. Priest, in account with Committee on Medical Bills:

Dr.

Received from St. Louis Medical Society	$30 00	
" " Jackson Co. Medical Society	25 00	
" " Kansas City Academy of Medicine	25 00	
" " John McDowell, Medical Asst	5 00	
" " Central District Medical Society	5 00	
	$90 00	
By Attorney fee		$50 00
" Copy Kentucky State Board of Health		2 70
" Typewriting medical bills		7 00
" Printing 4000 copies of medical bills and circular letter		18 00
		$77 70
Balance	$12 30	

Received of Dr. E. L. Priest, of Nevada, Mo., twelve 30/100 dollars for use on Committee Work. H. E. PEARSE.

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The President announced the delegates to the American Medical Association, as follows: —

S. C. James, Kansas City; C. A. Ritter, Kansas City; J. D. Griffith, Kansas City; Nannie P. Lewis, Kansas City; Franklin E. Murphy, Kansas City; H. C. Crowell, Kansas City; J. M. Jackson, Kansas City; A. H. Cordier, Kansas City; C. Lester Hall, Kansas City; G. O. Coffin, Kansas City; Wm. A. McCandless, St. Louis; F. J. Lutz, St. Louis; L. Bremer, St. Louis; R. Funkhouser, St. Louis; A. R. Kiefer, St. Louis; J. R. Fritts, Mexico; H. W. Latham, Latham; W. A. Braecklein, Higginsville; C. W. Fassett, St. Joseph.

Election of officers being declared in order, on the first formal vote, Dr. U. S. Wright, of Fayette, was elected President.

Dr. J. D. Griffith moved that the election of Dr. Wright be made absolutely unanimous.

Carried.

The report of the Nominating Committee was as follows:—

First Vice-president	D. C. Gore	Marshall.
Second Vice-president	J. R. Fritts	Mexico.
Third Vice-president	R. S. Kelso	Joplin.
Fourth Vice-President	Thos. Chowning	Hannibal.
Fifth Vice-president	Franklin E. Murphy	Kansas City.
Recording Secretary	B. C. Hyde	Kansas City.
Assistant Recording Secretary	W. A. Braecklein	Higginsville.
Corresponding Secretary	C. R. Dudley	St. Louis.
Treasurer	J. Franklin Welch	Salisbury.

Moved and carried that the Secretary be instructed to cast the vote of the Association for those nominated in this report.

The President appointed Drs. Campbell and Day to conduct the newly elected President to the chair. Dr. Wright then made a few remarks.

The following cities were placed in nomination for the next place of meeting: —

Jefferson City, by Dr. R. E. Young.
Joplin, by Dr. L. I. Matthews.
St. Joseph, by Dr. C. H. Wallace.

By a rising vote, Jefferson City was chosen.

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A paper entitled, "Modern Pathology and Treatment of Appendicitis," was read by Dr. Pinckney French of St. Louis.

Discussed by Drs. Tupper, Van Eman, Griffith, Crowell. Discussion closed by Dr. French.

Dr. C. H. Wallace asked that his paper be read by title.

Dr. John Punton asked that his paper be read by title.

Dr. E. R. Lewis of Kansas City read a paper entitled, "Intra-mural Fibroid of the Uterus; Removal During Fifth Month of Gestation; Recovery; A Normal Parturition; Mother and Child Doing Well."

Dr. R. E. Young moved that the thanks of the Association be given to the Blees-Moore Surgical Implement Co. for the badges, and to the local Committee of Arrangements and the citizens of Mexico for their entertainment and hospitality.

Carried.

Dr. H. C. Crowell of Kansas City read a paper entitled, "Report on Gynecology."

Discussed by Drs. Hall and Lanphear.

Adjourned.

AFTERNOON SESSION — THIRD DAY.

Association called to order by the President.

Dr. C. A. Dannaker of Kansas City read a paper entitled "Are Obstetrical Emergencies Fully Anticipated?"

Discussed by Drs. Kuhn and Barclay and closed by Dr. Dannaker.

On motion of Dr. Emory Lanphear, the rules were suspended and Dr. Lanphear offered the following amendment to the Constitution: —

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"WHEREAS, The American Medical Association has established a rule essentially as in the following resolution, and

"WHEREAS, The Medical Association of Missouri is in favor of higher medical education; therefore,

Resolved, That Article III. of the Constitution be amended by the introduction of this clause: 'But this Association will not recognize as a delegate or member any person connected with or in any corporation or faculty of any medical school, whose requirements are less than those of the Association of American Medical Colleges.'"

Dr. W. F. Kuhn moved that a committee of three members of this Association be appointed to take into consideration the proposition of citizens of Mexico, Mo., to establish a hospital for the use of this Association, provided that Mexico be selected as a permanent meeting place of the Association, and to make a report at the next meeting of the Association.

Carried.

The President appointed Drs. W. F. Kuhn, Wm. G. Moore and H. C. Crowell.

Dr. Emory Lanphear read a paper entitled, "Should the Specialist Pay a Commission to the General Practitioner?"

Discussed by Drs. Kelso, Griffith, Crowell, Kuhn, Barclay, Young, Moore, Dorsett, and closed by Dr. Lanphear.

Dr. R. E. Young moved that a vote of thanks be tendered Hardin College for the splendid manner in which it entertained the Association.

Carried.

Dr. W. F. Kuhn moved that a vote of thanks be given the out-going President, Dr. W. B. Dorsett, for his excellent services during the year, and the admirable manner in which he had conducted the present meeting.

Carried.

Association adjourned to meet on the third Tuesday in May, 1901, at Jefferson City.

B. C. HYDE,
Recording Secretary.

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PRESIDENT'S ADDRESS.

WALTER B. DORSETT, ST. LOUIS.

Fellow-Members of the Medical Association of Missouri:

It is customary and right for the president of this Association to express his thanks to the members for having exalted him to the high office he holds. It is impossible for me to express my thoughts and feelings, as well as my gratitude. The honor you have conferred on me is one I had long thought was beyond my grasp and, in accepting it, I was duly impressed with the responsibility of the position. How well I have discharged the duties incumbent thereon, you alone must judge. Last year at Sedalia, in thanking you for having elected me, I said, in speaking of the success of this year, that it did not depend upon the president but upon the work of each individual member. After the adjournment of the Association I was told by a worthy member that in this I was mistaken; it did depend on the president.

A careful retrospect, however, has not changed my mind. The committees serving prior to my election as well as those appointed by myself, have done noble work in accomplishing whatever success has been attained. Self-sacrifice on their part has been marked. Many of them have traveled hundreds of miles at their own individual expense to serve you and the great cause of medicine in the State of Missouri. To my fellow-officers and to these committees, then, is due all praise and in the name of the office I hold I wish on this occasion to say "I thank you."

Special praise is due the Legislative Committee. From their noble work I am constrained to believe that they must have had always in their minds the precepts embodied in Article II. of our Constitution, namely: "The objects of the

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Association are to constitute a representative body of the regular medical profession of the State of Missouri, which may advance the interests and encourage the unity and harmonious action of the entire profession throughout this State; to suppress empiricism as much as practicable; to restrict the privilege of practicing the profession of medicine to qualified graduates; to develop talent, stimulate medical inventions and discoveries, and to maintain our rights as medical men."

In view of the indisputable fact that our profession is fast degenerating into a trade, as evidenced by a careful study of the present existing conditions, it is incumbent upon the Association to make Herculean efforts looking to the enactment of suitable laws governing the practice of medicine in this State. Too much has already been done to think of abandoning this work. It must go on until the medical profession has been placed on a footing commensurate with the pride and dignity of the great State of Missouri.

Judging from the array of scientific papers shown on our program, the Committee on Scientific Communications has done good work. But should they share all the praise? Was not my declaration true when I said that the success of the meeting would be due to each individual member? It seems that everybody wanted to get on the program and do his best to make this meeting a success. This is certainly very praiseworthy. By your interchange of ideas as to diagnosis and treatment of disease, as well as by your elucidation of technique in the treatment of surgical cases, we are brought closer to perfection in the practice of medicine. Honest opinions clothed in suitable language and expressed with a conviction born of thoughtful study on the subject, has always characterized the debates before this body. Failures as well as successes are here related. He serves his profession best who, with courage, acknowledges his failures as well as, with self-congratulation, he announces his successes. By his successes we are assured of our own efforts. By his failures we are cautioned against pitfalls lest we also should fall into them.

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If I had made an effort to select a subject on which to address you, I fear I could not have selected one more in touch with the sentiment of this body than the "Advancement of Medicine within the Past Few Years." To thoroughly discuss this vast subject is too great a task to undertake in an address of this kind. A mighty army of medical men, assisted by many great minds devoting their time and energies in collateral sciences, are fast sweeping over this globe, clearing up doubtful and heretofore unknown fields, settling mooted questions, and discovering new causes for well-known effects. To comprehend the significance of this great work in all its details is beyond the power of any one mind. Even a résumé of the subject is a great task, so that I hope I may be pardoned if I speak only of a few subjects that have impressed me with their greatness.

About the time I entered the profession Lister's laws of antiseptics were agitating the medical world. More than once have I heard even a professor in a medical college ridicule the "new-fangled" ideas of a professional brother, when he saw the then accepted ideas of antiseptics carried out in the dressing of a wound. Crude indeed were our ideas when the carbolic acid spray was thrown into the cleft between the flaps of an amputated limb, to say nothing of the same spray playing upon the opened peritoneum during the entire performance of an abdominal section. Now we may at first blush say: "He was right to ridicule such ideas;" but it is only because improved methods of antiseptics, proven by better results obtained, can prompt us to make this assertion. But let us remember it was only the beginning. Close upon the heels of antiseptics came asepsis and its technique, both subjects now resolving themselves into surgical cleanliness, by which is meant, to have the field surgically clean, the surroundings clean and the operator and his instruments clean.

In an inverse ratio with the development of Lister's teachings has mortality and morbidity decreased. Prior to my appointment to the superintendency of the St. Louis Female

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Hospital in 1887, only two abdominal sections had ever been made in that institution, and it was then twenty-five years old — one a case of uterine fibroid and one a case of pus tube. The mortality in these cases was 50 per cent. Just at this moment I find it hard to give you the percentage of deaths following these two surgical procedures, but those of you who do abdominal surgery know how small it is.

Surgical cleanliness and the knowledge or how to apply it are the foundation upon which has been built the superstructure of improved surgical science, not only as applied to abdominal work, but throughout the various ramifications of all the specialties. So thoroughly have the necessities of surgical cleanliness been ingrafted upon the practice of the art, that the non-observance of it justly renders us culpably neglectful of our bounden duties. By the practice of surgical cleanliness explorations into the closed cavities of the body and into the closed capsules of joints have enabled us to appreciate in many instances the true nature of disease. The line of demarcation between surgical and truly medical cases has been made plainer, and being made plainer we are enabled to apply the proper remedy, be it medical or surgical.

In the contemplation of the advancement of medicine and the results that have been obtained, we should not be unmindful of the great work that has been done in physiology, pathology and bacteriology. Without the work done by investigators along these lines the results now obtained in medicine and surgery would not have been possible.

The mortality attending diphtheria has, since the discovery of diphtheria antitoxin, been so reduced that we no longer fear this disease. How wonderfully simple and easy is the hypodermic injection of the antitoxin; how difficult and dangerous the tracheotomy; how doubtful the efficiency of medicines and swabbing of the throat, as was so universally practiced. And so when we shall have seen the perfected antitoxins for the treatment of tuberculosis, streptococcus

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poisoning, tetanus and rabies come into general use, we will be brought still nearer perfection in the practice of the healing art.

For a want of the proper appreciation of the importance of the benefits of medical research to the public generally, little sympathy and encouragement are ever extended to the investigator and worker in medicine. Whatever is accomplished in medicine has to be obtained by his own unselfish desire to serve his fellow-man. His is a life of self-sacrifice to the public; and he is and always should be considered one of the chief public benefactors in the community in which God has cast his lot.

When we look around us and contemplate the avidity with which the public grasp all opportunities to become daft on the new pathies that are now and then evolved by designing and unprincipled people, we often feel discouraged and despondent, and for a moment wonder "how can such things be?" "How unappreciative," we say, "is the public." Now and then the following questions have been put to each of you individually: "Why do you doctors allow such a state of affairs to exist in our State?" "Why don't you try to protect the public?" Let us answer the first question with another: "Will you help the doctors to put down quackery in our State; and will you discourage them by refusing to patronize them?" As to the second question let us ask: "Does the public really want to be protected?" We answer this by saying: "Never, as long as the people do not know they are being humbugged." As soon as they find out that they are they will then lend us their assistance, and without our asking them.

But as citizens of the great Commonwealth, let us push forward, using all our energies with the people and their representatives, toward the enactment of laws governing the practice of medicine and surgery in this State, as well as the enactment of necessary laws for the protection of the health of our citizens.

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PROGRESS OF OPHTHALMOLOGY.

By J. H. Thompson, Kansas City, Mo.

Gentlemen: As chairman of the committee on ophthalmology I propose to present to this Association a few remarks upon the progress made during the last year in the treatment of the diseases of the eye. I regret to say that I find this a rather difficult task, because there has been very little, if any, progress made during the last twelve months in this branch of surgery. Yet, those who are familiar with the literature know that a great quantity of material has been published, but no real discovery had been made and no improvement in operative technique or therapeutics recorded. There are, however, some subjects which are now especially prominent in ophthalmic surgery, and can be suitably discussed at this time. They are — the extraction of the transparent crystalline lens in excessive myopia — section of the sympathetic in the neck and the removal of the cervical ganglia for the relief of ex-ophthalmic goitre and the cure of glaucoma — the use of the suprarenal capsule as an astringent.

We all know that these things were mentioned prior to 1899, but it is during the last year that sufficient statistics and experiences have been recorded to determine their respective value. At this time native Americans are not liable to excessive degrees of myopia. This is a condition frequently found among the German, French and Russian. Those who have visited the large ophthalmic clinics at Paris, Berlin and Vienna know that a comparatively large per cent of the people wear near-sighted glasses. For reasons not necessary to mention now, we believe that a certain degree of myopia is an advantage to those who work at near objects, and since civilized people spend much of the time reading, sewing and

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the like, all of which can be better done the closer the book or object is brought to the eyes, it would seem that the increase of near-sightedness in a nation is an evidence of progressive development, the eye adapting itself to its work.

Unfortunately nature has not learnt the safe degree of myopia so it often happens that the eye becomes too elongated, when the individual is incapacitated for all work and in danger of sudden blindness, since in extreme myopia the internal tunics are greatly stretched and diseased, when detachment of the retina may happen at any moment.

In myopia greater than ten dioptres or near-sightedness more than $\frac{1}{4}$, glasses cannot be worn strong enough to prevent excessive convergence in near work, which necessarily subjects the eyes to unusual muscular compression. In this way a vicious circle is established. Fukala in order to do away with strong concave glasses and to move the binocular near point to a greater or more convenient distance, removed the lens. He found that the operation was neither difficult nor dangerous — that when successful the patient was, as it were, introduced into another world. Distant objects, the landscape, the horizon were seen as you and I see them — thick diverging lenses were discarded and the danger of sudden blindness reduced to a minimum. For several years this operation has become more and more popular, and the statistics which are now being collected show that we may safely rely on it for the relief of malignant myopia.

In young subjects the anterior capsule of the lens is simply torn with needles, introduced through the cornea, and the resulting cataract allowed to become absorbed. Two or three needlings may be necessary to secure a black pupil; of course, the iris is to be kept well dilated during the time by atropin — in older people the lens capsule is simply incised, and the lens substance, so soon as it is sufficiently swollen, removed through a linear incision in the cornea. Some operators advise a preliminary iridectomy to avoid complications. This may or may not be done according to the judgment of the

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surgeon. I prefer the simple operation for a round pupil has advantages.

There are few things more interesting in medicine than the subjects glaucoma, and ex-ophthalmic goitre. These two diseases are attractive from the fact that notwithstanding all investigation, we know nothing of their causes. One, glaucoma, we can cure. The other is as much beyond our control now as it was when Trousseau published his masterly paper on ex-ophthalmic goitre in his clinical lectures. It must ever resound to the praise of our profession that those things which are most perplexing are subjects of persistent investigation, and that fame is offered as a reward to him who shall discover a new malady or find a specific treatment for an old. It is with this ambition that during the last year several additions have been made to the therapy of Grave's disease, and surgeons have devised methods for the cure of the ex-ophthalmia. Ball of St. Louis has been working in this line. He presented to the International Ophthalmic Congress at Utrecht, April, 1899, a paper on the removal of the cervical sympathetic ganglia for the relief of certain diseases of the eye, and for the cure of ex-ophthalmic goitre. This was a scientific paper and it is our privilege to criticise it.

Severing the sympathetic nerve chain in the neck, or the removal of the several ganglia is not a new operation; but, for the purpose of curing ex-ophthalmic goitre and glaucoma it is one more addition to the several operations that have already been tried. The technique of the operation is difficult, and its performance dangerous, which make it a major surgical procedure. When it is desired to remove one or more ganglia from the neck an incision is made along the posterior border of the mastoid muscle from the process even to the clavicle; by blunt dissection the muscle is raised from the carotid artery, the sheath opened and the pneumogastric nerve located; then are the vessels raised upward and forward and the sympathetic nerve sought for on the deep muscles of the neck; it is then severed and if it is desired

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to remove the ganglia they are found and cut away, the severed nerve being used as a guide; during the operation the spinal accessory is cut. The author says that there is no particular danger unless it is proposed to remove the lower cervical ganglion. In doing this one surgeon ruptured the vertebral artery, and was compelled to ligate the sub-clavian. Such an operation or modifications of it, are recommended to cure simple glaucoma, for it has been found that by it the intra-ocular tension can be lowered. I must admit that I am a little skeptical, for I have in mind the extraordinary claim made for the Bedal operation for glaucoma, viz.: stretching or rupture of the nasal branch of the fifth. This operation you may remember was advised by the leading French ophthalmic surgeon, who claimed extraordinary results from it. It is known to-day only by its history and its name.

Then again I see no necessity for such an heroic operation when in the vast majority of instances glaucoma can be relieved by the removal of a piece of the iris, an operation devoid of danger, pain or difficulty. My experience is a well placed iridectomy and the judicious use of eserine will relieve, if not cure, glaucoma, especially inflammatory glaucoma. Consequently I cannot advise sympathectomy for that disease. It may happen, that in spite of all our endeavors simple non-inflammatory glaucoma will progress to complete and irreparable blindness. In such unfortunate cases when repeated iridectomies and sclerotomies have failed, section of the sympathetic may be tried. I use the word, repeated, advisedly, for a second iridectomy may cure after the first has failed.

Different, however, must my criticism be in reference to this operation for the cure of ex-ophthalmic goitre, a disease of uncertain origin and intractability. We are all quite familiar with the recent literature on this subject, and have had experience in its treatment, for it is quite common. The trouble is we do not know the functions of many ductless glands, the thyroid in particular. Some think that when the

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thyroid gland is diseased, it fails to abstract from the blood a particular poison which circulating in the body causes palpitation of the heart, protrusion of the eyes and a peculiar train of nervous symptoms. Others teach that one of the purposes of the gland is to secrete a substance, iodothyroidin, which has some unknown control over the sympathetic system. If a superfluity of this is in the blood Graves' disease results. To my mind this last proposition appears to be correct, for all surgeons know that very often removal of the enlarged glands is immediately followed by improvement, the eyes soon taking their normal position in the orbit. The physiological antidotes to iodothyroidin, are atropin and nicotin. In some cases both these drugs have a quieting influence, but are not curative. So far the best treatment, but not at all hopeful one, is galvanism of the sympathetic in the neck. Reasoning that galvanism has a sedative rather than a stimulating influence on sympathetic nerves, it is reasonable to think that sympathectomy will become a recognized method for the relief of ex-ophthalmia. We must remember that Graves' disease often disappears as suddenly as it arises, and that medical or surgical treatment may get the credit for relieving this condition unjustly. At other times ex-ophthalmic goitre is a malignant disease, when, of course, we feel ourselves justified in suggesting hazardous operations for its relief. Although most of our text-book writers do not especially recommend removal of the thyroid gland for the cure of Basedow's disease, I believe that many persons will be relieved by that method provided enough gland substance is left to prevent myxodema. When, however, this fails and medicines and electricity prove useless, sympathectomy is justifiable and not until then.

The last subject I desire to mention is the extract of the suprarenal capsule. I know nothing that can equal the depleting power of this substance. If a waterous infusion of the dry suprarenal capsule of the sheep be applied to an inflamed or congested mucous surface, almost immediately the

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parts become bloodless. A very badly inflamed conjunctiva will become completely bleached, but when the effect of the drug is gone the congestion will become as great as before. So it is doubtful if the gland extract has any therapeutic virtue. But in a surgical sense it is invaluable. We know from experience that cocaine will not anesthetize an inflamed conjunctiva. When, however, the eye is bleached by the means mentioned above, cocain becomes effective. This is a fact of the greatest importance, for it permits the ophthalmic surgeon to operate under local anesthesia in cases which heretofore we were compelled to anesthetize by chloroform or ether. I have used the drug quite extensively in ophthalmic cases and I have not yet found it detrimental in any respect. In throat and nose practice it is equally beneficial, but I learn from some of my confreres that it seems to increase the tendency to secondary hemorrhage.

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INTRA-OCULAR TUMORS.

By C. Barck, St. Louis.

There are few affections of the eyes where the question of a possible fatal termination comes into consideration, and foremost among such rank the intra-ocular tumors.

Our knowledge of these has been largely increased within the last years, mainly by two treatises — one on glioma, by Dr. Wintersteiner of Vienna, the other by Dr. Kerschbaumer of St. Petersburg on sarcoma. These authors have collected the vast and scattered material with the utmost care and zeal, and in consequence our prognosis for life now rests on a more definite basis.

As well known, the mentioned two — glioma and sarcoma — are the only tumors developing in the interior of the eye-ball, and both belong to the most malignant type. Glioma originates from the retina; sarcoma from any of the different portions of the uvea.

Histologically our views have somewhat changed. I have used so far the term glioma, which was given by Virchow; Wintersteiner wishes to introduce in its stead the term neuro-epithelioma. Whilst in the main these tumors consist of irregular masses of round cells with large nuclei, at some places more evolved structures are found, namely, cylindrical processes in which the cells are arranged concentrically around an axial blood vessel. These cells are larger than the others, and the picture resembles more or less the well-known arrangement in epithelioma. These tubular structures are mainly found at the peripheral portions of the tumor and seemingly accompany its growth. In the center, on the other hand, we very soon find retrogressive metamorphoses, necrosis, fatty and hyaline degeneration, and finally chalky deposits.

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The microscopic picture is therefore quite different in different parts of the tumor.

Of the sarcomata, the large majority belong to the class of round-cell sarcomata. Spindle-celled sarcomata are rare and are noted for their slow growth. The relative frequency of melano-sarcomata to leuco-sarcomata is about five to one.

The exact locality from which the tumor originates can, in many instances, not be established. In 63 cases of glioma, however, where such was possible, the origin was found to be: 12 times anterior to the equator and 51 times posterior to it, and amongst the latter 4 times from the macula lutea and 13 times from the optic papilla.

Of 100 cases of sarcoma, 14 developed from the iris, 12 from the ciliary region, and 74 from the choroid.

Glioma is exclusively a disease of childhood, occurring most frequently between birth and the age of seven. Beyond sixteen no case is on record. The first year of life shows the highest percentage, 136 cases out of 467; 34 of these were congenital.

Sarcoma, on the other hand, is found most frequently between the thirtieth and sixtieth years. Cases before or after are rare.

The clinical course is very similar in both varieties of tumors. We distinguish the following four stages:

1. The period of indolent intra-ocular growth.

2. After the tumor has reached a certain size, it gives rise to increased intra-ocular tension, accompanied by inflammatory symptoms and pain; glaucomatous period.

3. The period of extra-ocular growth, after the tumor has pierced the sclera or cornea.

4. The period of metastases.

In the first period the only subjective symptom is impairment of sight and scotoma of the visual field dependent upon and corresponding to the location of the tumor. This symptom will of course only be elicited in grown people, and is consequently valueless in the case of children. Therefore in

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glioma the first symptom noticed is usually an objective one — the yellow reflex out of the depths of the eye. The peculiar shine, which excites early the curiosity of those around, is noticeable in the beginning only from certain, later from all directions. Its color is yellow or yellow-whitish, sometimes of metallic hue, at others more dull; bluish and greenish tints intermixed are due to detached portions of the retina.

Unfortunately this peculiar reflex is not absolutely characteristic of glioma, as it may be caused by other affections. All such have been designated by the collective term "pseudo-glioma." The most frequent of these are: —

1. Complete detachment of retina, when the retina is folded closely behind the posterior lens-capsule.

2. Inflammatory processes of the uvea with exudation into the vitreous.

3. In very rare instances tubercules in the choroid.

4. Cysticercus in the vitreous.

The points of differential diagnosis are the following: —

The intra-ocular pressure, which is normal or increased in glioma, and normal or decreased in detachment as well as in exudates. But there are exceptions in both directions — increased tension in detachment or exudation and decrease in glioma — occurring especially when there are retrograde metamorphoses in the center of the tumor. Whilst, therefore, the intra-ocular tension, if found to be above or below the normal, is a very valuable symptom, and must be carefully tested in every case, it is not an absolute one. Then the instances in which the tension is unaltered are rather numerous.

The history, which ought to be carefully taken, especially as to possible causes of detachment or exudates, for instance, traumata and general infectious diseases.

That the color cannot be depended upon, as maintained by some authors, will become apparent to you upon examination of the specimens.

A number of observers emphasize the fact that glioma is,

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as a rule, vascularized and an exudate devoid of blood vessels. Yet there are also numerous exceptions both ways.

The surface, as seen directly or with the ophthalmoscope, is more even in exudations, whilst showing protuberances in glioma, also in detachment. But if a glioma fills the vitreous completely, its anterior surface corresponds in shape to the posterior lens-capsule and presents an even surface, as you will notice in one of the specimens.

Summing up, there is no symptom nor symptom-group which enables us to make a differential diagnosis with absolute certainty, and with our present knowledge this is, in a number of cases, simply impossible. Therefore the statement of Hirschberg (Berlin) in 1869, that it was possible in every instance, could not be and has not been accepted by the profession.

Amongst twenty-four eyes enucleated at Moorfields Hospital, between '88 and '92, with the clinical diagnosis, glioma, seven proved to be pseudo-glioma and of twenty cases of Becker (Heidelberg) five. This author, in spite of his rich experience, once declined to make a positive statement, after the eye had been cut open. The same happened in my practice. I had enucleated this eye without an absolute diagnosis, and after I had divided the ball it just happened that one of our best pathologists called at my office. I showed him the specimen, but neither of us dared to make a definite differential diagnosis between glioma and exudate. The microscopic examination alone proved it to be true glioma.

In view of such facts we must agree with the conclusion of Wintersteiner, "that it is better to remove ten hopelessly blind eyes under a mistaken or doubtful diagnosis of glioma than to let one child die that terrible death by operating too late."

In sarcoma the subjective appreciation of impaired vision in one eye causes the patient to see the physician quite early, before any other symptom has developed. The smallest sarcoma I have seen was shown by Dr. Würdemann (Mil-

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waukee) at the meeting of the Western Ophthalmologic Association two years ago. It was a melano-sarcoma of the ciliary region, not much larger than a pea.

In the glaucomatous period an exact diagnosis is sometimes interfered with by the cloudiness of the media, and there are a number of cases on record where, after enucleation, a sarcoma was unexpectedly found as the cause of the absolute glaucoma.

In the two latter stages there is not the least difficuty as to diagnosis.

As soon as the diagnosis of a malignant tumor is established, enucleation is indicated in the first two periods, evisceration of the orbit in the third and in case of recurrence. In sarcoma of the iris only has attempt been made to extirpate the tumor with the hope of saving the bulbus, but with doubtful success. Of the few cases reported in the literature as definite cures by partial extirpation, none has been under observation for a sufficient length of time afterward to warrant this statement.

The period of freedom from relapse which was formerly agreed upon as one year for glioma must be extended to two years before we can consider the patient as out of danger. In a majority of instances relapses do occur within the first year, and on an average four months after the operation if this was performed during the first period, twenty-seven months if done during the second, and two months if during the third. Upon this basis of two years' freedom the percentage of cures has increased from 6.5 per cent in 1869 (according to Hirschberg's statistics) to 13.7 per cent in 1897 (Wintersteiner's statistics). This favorable result is without any doubt due to the earlier diagnosis and consequent earlier operation, for the prognosis differs very widely for the first two and the last two periods. Among sixty-eight cases of recovery after enucleation (Wintersteiner) there were only two in which the sclera had already been perforated. And of all the exenterations of the orbit in the later stages, or after re-

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currence, only two have prevented the fatal termination. The statistics for sarcoma vary considerably, namely between 23 per cent and 60 per cent of recoveries. As an average we may state that the percentage of cures is near to 50 per cent, showing that glioma is by far the more malignant tumor of the two. Glioma is furthermore found more frequently in both eyes than sarcoma.

Metastases in glioma occur most frequently within the cranial cavity and on the face and head by continuous propagation; next frequently in the lymph-nodes, bones of the skeleton, liver and other glands.

In sarcoma metastases are found most frequently in the liver, then in the brain, then in the lungs, etc.

My personal experience embraces five cases of glioma; three of these are still alive after two, three and nine years respectively; one died within the first year after enucleation, secondary operation considered unadvisable; one case was lost sight of. All the cases of sarcoma which I saw were seen in the third stage and ended fatally.

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TOTAL CILIECTOMY.

By M. F. Weymann, St. Joseph.

Few conditions have had proposed for their relief as many surgical measures as the post-trachomatous malposition of the lashes, and, as elsewhere, this superabundance of procedures is in itself evidence of the insufficiency of the methods. We do not desire to deny their usefulness categorically, but so far nothing has been able to relieve permanently the very worst cases where the ciliary border has been so long and so thoroughly invaded by chronic inflammation, thickening and subsequent phlogoplastic shrinkage, that there no longer exists a row or line of cilia at all.

In these most intractable cases the regular lashes are largely gone, but they are more than replaced by innumerable "false cilia." In the production of the latter the irregularity of grouping is so great that I consider the term of "caterpillar margin" a most suitable description. The normal lashes are stout, curved outward and well pigmented, while the "adventitious" specimens are stunted, light in color, lacking the regular pigmentation, and growing anywhere, even up to the white line marking the free margin of the tarsal cartilage. In this connection I would state that this sort of distichiasis is often found on lids with comparatively little incurvation of the cartilage (entropium).

In my own practice I have followed the indication enumerated below in practicing total extirpation of the lash-bearing border:—

1. Where the caterpillar margin exists.
2. Where ordinary methods have failed to give permanent relief.
3. Where the usual means imply more expenditure of

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money and time than the patient is able to bear. (In this latter instance I fully explain and let the patient give decision).

Objections to the operation:—

1. The vandalism of the work, marring the image of Him.

2. Depriving the eye of a natural protection from mechanical injury.

Refutations: *Ad* 1. If a sore-eyed individual is a "thing of beauty and a joy forever," then I should like to know it. Someone may say that we can cure "sore eyes," but that we cannot grow new lashes. I wish to state that my operation does not apply to cases otherwise curable, but to those that have been cut and treated and stitched without avail. Besides, the cosmetic effect of lashes (ordinary) is greatly overrated. It is surprising how many people fail to notice their absence after extirpation. In any case, a person without them, and with good eyes, looks a great deal better than someone with reddened and discharging optics.

From a practical consideration, the question fares similarly, for anyone prefers a good, serviceable eye without lashes to an inflamed and bothering organ with a caterpillar margin. It should be added that as an item of beauty such cilia would never be enumerated anyway.

Ad 2.— Lashes as dust-sifters have been given too much credit. Of course, they do protect, especially when a heavy cloud of dust is seen to be approaching, but even then only imperfectly, for when particles fly fast and thick we simply close our eyes. If we have no warning at all, the reflex is not sufficiently prompt to give us protection, and our lashes count for naught. Perspiration is dammed back chiefly by the brows, not by the lids.

However, with all these shortcomings of the ciliary service I should hate to remove them except "for cause." Considering that we can get a fairly efficient artificial protection and remove the watering, the soreness, the redness, the swelling, the loss of sight, the pain, the dread of light, and the disgusting scabs and crusts, we think we have good

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cause, indeed; for it means to the organs of sight a cure not otherwise obtainable.

I append the report of my first case subjected to total ciliectomy in 1898: —

Mr. C., 23 years of age, with receding forehead and idiotic expression of face in general, is brought to me for an eye-affection dating back to his early infancy. He lacks power of distinct articulation, mumbling somewhat in the manner of people with very bad cleft-palate; also is wanting seriously in muscular co-ordination, reeling and staggering when attempting to walk. Head bowed down owing to great photophobia, lids heavy and wrinkled, cutaneous excoriations from lacrymation, and outer canthus much contracted, but deeply sunk behind a mound-like bump of skin. The latter, on examination, is shown to be a duplicature of dermal tissue, such as we observe forming when the lids are closed with great force; instead of being, however, a mere opposition of folds, it had become a solidly united mass by obliteration of the excoriated interplicate furrow. This condition, aggravated by the photophobia, made evertion impossible.

After the use of cocaine, turning of the lid showed an obliterated cul-de-sac with the conjunctiva over the lid in a glistening white condition, the result of trachoma in the cicatricial stage. On the upper outer edge a few crumbling granulations were left, and on the lower even typical ones persisted. Entropic curvature was impossible, owing to the almost complete atrophy of the tarsal cartilage. In fact, this rendered continued eversion impossible, the lid rolling away under one's fingers with the least upward tendency of the ball. Cornea showed some pannus above, old ulcer scars below and in center. Caterpillar lashes, but not visible ordinarily. Action of orbicularis unique. After eversion, the lids first closed naturally, but immediately afterward there would come a powerful contraction of the orbicularis fibres close along the free border of the upper lid, resulting in a rolling-up motion of the upper lid just like that of a stage-curtain.

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With this, the "caterpillar" disappeared completely, while the lids seemed at the same time drawn up slightly, initiating the second movement for permanent closure. At first I attributed this drawing up to the levator palpebrarum, but repeated trials demonstrated that it was apparent only and due to the illusive upward motion caused by the rolling in of the upper lid.

Though I have often seen tonic blepharospasm of the worst type in scrofulous eye-affections, nothing ever resembled the action of these upper lids. The lower were inverted in the usual way.

Treatment indications: —

I. Measures addressed to primary lid affection.

II. Removal of secondary consequences: (a) canthoplastic operations; (b) plastic correction of the "skin-bump;" (c) removal of lash irritation; (d) resection of perifissural obicularis fibres to prevent blepharospastic inversion of the upper lids.

Seeing the chief source of trouble in the lashes and considering their vicious arrangement, together with the complete loss of tarsal stiffness, I decided to remove completely the lash-bearing border and the fibres of the orbicularis around the palpebral fissure (above only). Operation performed at St. Joseph Hospital, before the students of the Central Medical College. Removal of stitches on third day. On fourth day patient opened his eyes without distress in ordinary room light — a performance unknown and impossible to him before. Cu SO_4 touchings were made for about three weeks, when it became apparent that the rest of the programme had become superfluous.

I saw this patient some four months later with his eyes wide open, with very fair sight, in spite of the corneal scars, and, to my great surprise, without the reeling and staggering uncertainty of gait noticed before. He still showed a peculiar swaying motion, but there was certainty and precision in his locomotion. Even his idiotic expression had greatly vanished.

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The general improvements I do not, of course, attribute to the operation *per se*, but when we consider that the sum total of all the impressions forming mind are mostly by way of the organs of sight, of the use of which this man had practically been deprived since childhood, the change assumes quite a natural aspect.

I have detailed this case with some minuteness as a type. Since then I have operated on a number of other cases with equally satisfactory results. I also have tried excision of a part of the lash border, but with bad results, because (1) the contrast with the remaining part makes the defect immediately and shockingly noticeable; (2) in smaller pieces some lashes are apt to be missed.

The operation can be painlessly done under subcutaneous injection of 1 per cent cocaine in saturated solution of boracic acid. The syringe should enter in the center of the lid, about 3 mm. from the free border; then the needle point should be pushed to the external canthus, whence it is withdrawn in little retractive efforts, with each of which a drop or so should be discharged. Treat inner side likewise.

Make an incision 3 mm. from the free border of the lid and parallel to the latter, and carry it from canaliculus to outer canthus. This should go as deep as the cartilage, but the latter must be respected. To avoid possible injury to the ball, and, also, to have a support, the lid is tensed by a rubber spatula or entropium clamps. Pass a cataract knife through the lash-bearing border thus marked off, entering near the center of the flap, between the tarsal cartilage and the superincumbent parts. It is essential to hold the knife well down to the tarsus, so that no tissue containing hair roots can escape. As the blade emerges in the upper (first) incision, the edge is turned forward and the lash-bearing bridge is cut. The lid is now well tensed by a forward motion (away from the globe) of the spatula, while the surgeon picks up, with a fixation forceps, the lash-border at its divided center. Each half is detached with the cataract knife passing over the cartilage in

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a slow see-saw motion, its blade being held after the manner of a razor, while the flap is steadily pulled away as if in an effort to peel it off. A well denuded surface should be whitish smooth throughout. If little soot-like specks are visible, it is a sign that ciliary follicles remain, which must be scraped off. Further orbicularies resection is governed by general principles.

Two small vertical incisions are made to facilitate the slipping of the skin. They run upward from either end of the first incision and, above the latter, should not go deeper than the skin.

Eight or more stitches are needed along the full length of the lid, and ½ for each accommodative incision. A thin curved needle with silk No. 6 does the best in my hands. In passing the point through the cartilage the full thickness must not be penetrated owing to the danger of thread friction to the cornea. Besides, even the smallest bridge of tarsus tissue outlasts all demands of approximation till complete healing.

The operation is somewhat bloody, several small arteries requiring temporary compression or, still better, torsion.

The following historical data are taken from the encyclopedic Traité d'Ophthalmologie of my esteemed teacher, Prof. de Wecker: —

1. Cutting off a band of the whole thickness of the lid sufficiently wide to take in all cilia. Bartisch, Cortum, Heister, 1739.

2. Excision of lash-bearing skin-band without covering the defect. Beer & Jaeger, 1818.

3. Resection of lash-bearing border, destruction of hair-follicles, on exposed surface by nitric acid (!), pasting back skin by means of adhesive plaster (! !). Berlinghieri, 1825.

DeWecker admits the desirability of the results sought for, but condemns the removal of the lashes on account of the vicious cicatrization and nodular scars that follow. It is easily understood how such coarse procedures should have had such bad consequences. The mode of operating described by me will obviate those faults and relieve certainly and lastingly the condition it has been proposed for.

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DISCUSSION ON PAPERS BY DRS. THOMPSON, BARCK AND WEYMANN.

Dr. B. E. Fryer, of Kansas City: Throughout the civilized world many operators are, as Dr. Thompson says, removing the lenses for these high degrees of near-sightedness, and with the very best results as Dr. Thompson states. A few of the operators object to this unless the myopia reaches from 15 to 20 dioptres. Occasionally iridectomy will arrest or cure the chronic form of glaucoma, but my experience, in agreement with that of many of the oculists of the world, is that this unfortunate condition is not arrested by either drugs or treatment. So far as the removal of the ganglia is concerned, that is not yet sufficiently done to decide what the result may be. I do not believe that the intraocular pressure is always increased if the tumor be large. I have seen cases of sarcomata in which where the tumor was large the tension was reduced. As the doctor states, with the smaller tumors it is very often so.

Dr. James Moores Ball, of St. Louis: A paper that I had the honor of presenting last year before the International Congress of Ophthalmologists contains the histories of the patients upon whom I made three operations for removal of the ganglia, one being bilateral. I have since that time made several additional operations, and I propose in about a year from now to give you a report which will bring the history of each case up to that time. It is yet too soon to determine the exact value of this operation. But certainly it has a place in ophthalmic surgery, for any operation that will produce such marked changes in the eye as the removal of the superior cervical ganglion does, presents a field of usefulness in our line of work. I still make use of iridectomy in appropriate cases but repeated iridectomies often fail to give these patients relief, and in such cases I shall certainly consider it my duty to remove the cervical sympathetic. I do not say regarding this operation that I would give up other methods of therapeusis. Not for a moment, but I do reiterate the statement that this operation, in my judgment, has a field in ophthalmic surgery.

Two of the specimens presented by Dr. Barck were from cases in my practice. The rarest one is a sarcoma of the eye which was consequent upon a sarcoma of the leg. One of the most interesting cases in the doctor's list was the one of pseudo-glaucoma, a report of which I presented to one of our local medical societies two or three years ago, and which was examined by Dr. Barck, by Dr. Jennings and several other ophthalmologists, and not one of them could make a diagnosis. It was only after the removal of the eye and microscopic examination that it was possible to determine that this was a pseudo and not a true glaucoma.

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Dr. Barck: Does the history of the case show that the trouble of the leg began first?

Dr. Ball: I do not remember that the records of the City Hospital show that the eye was examined at so early a period as that. The early history of the case does not show the condition of the eye.

Dr. Barck: It is not known, however, what was the condition of the eye before that?

Dr. Ball: No.

Dr. J. H. Thompson, Kansas City: In regard to iridectomy, I take the position that in a large majority of cases of simple glaucoma a well applied iridectomy or two may relieve them; at least that has been my experience.

As to these sarcomata, it is often a very difficult thing to determine if they are intraocular or not. The day before I came down here I saw an ntraocular sarcoma of the ciliary body and arachnoid. I told them that the probability was it would have to come out, but that as it was not paining, it was best to let it alone for a little while at least, until it showed some symptoms of glaucoma, and then we would remove it. But I advised them to take counsel before doing so. I saw a case of sarcoma of the iris in a child 5 years old, also one on the first finger and one on the leg. Whether the sarcomata on the body were secondary to that in the eye or not I cannot say.

Dr. C. Barck, St. Louis: I did not mean to confine the decrease of intraocular pressure to the small tumors. In some instances I have seen cases where the entire ball was filled out with the tumor, still the intraocular pressure was decreased. As to the removal of the cervical ganglion, I must confess that I am rather doubtful as to its value. I saw the operation done at the St. Louis City Hospital and there was no improvement. What connection there is between the histologic effects, removal of the cervical ganglion and the curative effect on chronic glaucoma I am not able to concede as yet.

As to supra-renal capsule extract, I use simply a small quantity of dry powder and I must confess that its effect is very valuable. I believe the supra-renal capsule extract is one of the best aids to our pharmacopeia made in late years and that its effects are not fully known yet and that we will derive greater benefit in the future from it than we do now.

In regard to the paper read by Dr. Weymann on Ciliectomy, I would like to state historically that his method has been extensively practiced in the first part of this century. It was practiced by Denmar, Sichel and Ahl, and that it was expressly by the endeavors of Ahren that it has gone into oblivion, or rather, that it has been succeeded by the better method of transplanting the bottom of the cilia. There is no doubt that there are certain reasons which work against total abstraction of the cilia, and if we can accomplish the same desired effect by transplanting, it ought to be done. I must confess that I have never been obliged to resort to that in the cases which have come under my notice, as the usual operative procedure yielded a successful result. There have been a number of operations devised and

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yet there are cases in which none of them will produce the desired effect and then it is that Ahren's operation of transplanting of the bottom of the cilia comes in and in order to get a good, free action of the lids, it is better to cover the free wound with mucous membrane.

Dr. M. F. Weymann, St. Joseph: When I proposed this operation, I said that it was not intended for all cases, but I pointed out the limitation; nor did I expect to discuss all the possible means at hand to remove the irritation, hence much of the discussion has been outside the paper. It is a fact, however, that many of the operations done for this trouble are unsatisfactory; every practitioner will admit this; and it is to be remembered that many cases that are unsatisfactory in result do not again present themselves to the operator; they go elsewhere after a time. One point that struck me particularly was in regard to the insufficiency of iridectomy in cases of chronic glaucoma. There is no doubt that the so-called non-irritative form does give unsatisfactory results. There is a form which does not show any inflammatory action, the so-called chronic form, where iridectomy will sometimes fail and I believe that if we do not succeed at first we should practice it a second time.

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LIMITATIONS OF THE LARYNGOLOGIST IN THE GENERAL TREATMENT OF NOSE AND THROAT DISEASES.

By H. W. Loeb, St. Louis.

The tendency which is observable in modern laryngologic literature to ascribe to the general system a closer etiologic relation with the nose and throat must have one important effect — to call for a more general treatment of the upper respiratory tract.

Before the local propaganda had practically absorbed the attention of specialists in our line, the general or systemic means comprised in great measure the plan of treatment of nose and throat diseases. And now that localism has had full sway, it is to be expected that the general treatment should come more into vogue. Perhaps, if it were merely a return to former conditions, there would not be much call for a paper upon limitations in this regard. But we must not forget that during these years changes have taken place which have increased our knowledge tenfold and our range of instrumentation and manipulation a hundredfold; which have so added to the science of medicine that no man can encompass it; which have so multiplied the fields of work that division of labor is not alone a pleasure, but a necessity. Knowledge is no longer cloistered in the minds of a few men; it is open and free to him who will but learn. And its adherents are no longer numbered by the few, but by the many. Naturally, this encourages competition in the acquirement of knowledge and struggle for supremacy in the application of knowledge to the various fields of human activity.

The pace set by all these workers results in the development of the special lines and to such an extent that he who would

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keep up to the standard set by these pacemakers must confine himself, almost exclusively, to the domain of his own work. Hence when there is a call to return to a general view of medicine, for the cure of certain nose and throat affections, the specialist who has been in great part a localist finds himself, if he be conscientious to patients, in a field which he cannot work, except to the detriment of his special duties, which cannot receive the attention they require.

It is a consideration such as this, that has led me to bring before you some points in the relation of the throat and nose to the general system which seem, at least, to substantiate the proposition that has been made, to the effect that the practitioner and not the specialist should conduct the general treatment. I know the argument is advanced that the specialist should be first a general practitioner, and then become a specialist, that he should never sacrifice his interest in general medicine for the detail of his specialty. And yet the progress in general medicine is so great, that ten years make a tremendous difference and the specialist, after such a lapse of time from participation in the actual practice of general medicine, will find such a change that he will be in almost an unknown world. Then, he can barely keep up with the literature of his own line — not to speak of the tremendous amount that is to be included under the head of general medicine. Every month there are published about 300 articles devoted exclusively to the nose, throat and ear — the whole domain of medicine includes many thousands. Which is to be chosen, the relatively few or the impossible many? Another thing, the laryngologist's attention is in the main devoted to manipulation with instruments of examination and of therapeutics — can he be expected to be proficient in these and at the same time capable of outlining the plan of treatment which comprises conditions and circumstances remote from the nose and throat?

Because a paralyzed left vocal band is due to pressure upon the left recurrent, which in its turn depends upon a tuber-

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cular pleurisy or lymphnode, is that any reason why the laryngologist should treat the tuberculosis? It seems to me that his function was completed when he discovered and localized the paralysis. Because chronic inflammations of the larynx and pharynx are often associated with bronchial and pulmonary conditions, and because the heart is in anatomic relation with the lungs and bronchi, is that any reason why the laryngologist should conduct the treatment of heart affections, or, perchance, kidney affections, which cause or result from cardiac diseases? I can understand how one who devotes his attention to the heart and lungs must be somewhat proficient in the diagnosis (not treatment) of nose and throat affections, but that the laryngologist should affect to include the lungs, heart and kidney is either presumptuous or evidences a lack of full interest in his own line. It must be admitted however that circumstances sometimes throw a laryngologist into the necessity of including diseases of the lungs in his work, but few are equal to the task of properly fulfilling both functions.

I say nothing of the justice which should be accorded the general practitioner who sends patients to laryngologists and to other specialists, for that matter, for his proper territory should not be encroached upon by the very men to whom he refers his cases.

Another phase of the question is to be found in the justice to patients which we all should and do accord. Should we, whose view is largely limited by the requirement of our special study and duties, assume to meet the general indications with a skill equal to the general practitioner whose efforts are continually directed towards general conditions which we are considering. Is it not better for each to fulfill his own part of the medical and surgical management of the case — does not our own obligations to our patients demand this? We can, naturally, advise and consult with the general practitioner upon these matters, but to carry out these general indications is surely his particular function.

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Relative to the bearing which the general medicine and other specialties have upon laryngology, it will be interesting to consider the various conditions which may be associated with hemorrhage of the upper respiratory tract. According to Hagedorn (1) they include the following: —

Changes in the blood vessels and blood itself, hemophilia, morbus maculosus Werlhofii, scorbutus, purpura hemorrhagica, phosphorus poisoning, anemia, leukemia, pseudo-leukemia, diabetes mellitus, fatty degeneration of the blood vessels, diphtheria, variola, ileo-typhus, pyemic processes, gout, influenza, acute rheumatism, vicarious menstruation, nervous causes, lung diseases, heart diseases, interstitial nephritis, cirrhosis of the liver and pertussis. Is there a single condition enumerated here whose treatment a laryngologist would be justified in undertaking? Certainly there is as much reason to undertake general treatment of those complications and associations of epistaxis and hemorrhage from the pharynx as to prescribe general or systemic treatment for chronic rhinitis or pharyngitis.

In this connection, it might be well to mention that Kompe (2) has discovered that epistaxis is a precursor of softening of the brain, which plainly indicates that in this instance the laryngologist might play the role of a diagnostician, but not that of a therapist.

When we investigate the various general and remote conditions which complicate nose and throat diseases, or which come into relation with them, we must be more than willing to admit that they cannot fall within our therapeutic scope, unless they are relievable by local means or measures whose effect is local. Their number and distribution certainly offer a formidable argument in this regard. For instance Friedrich (3) groups them as follows: —

Respiratory Diseases: All chronic lung diseases, asthma, emphysema, bronchitis, croupous pneumonia, chronic pleurisy, affections involving the apex of the lungs, edematous pleurisy, pleuritic exudates, chronic indurative processes of

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the lungs, tuberculosis, swelling of the intrathoracic lymph-nodes, anthracosis, tumors of the mediastinum, diseases of the bronchial and peritracheolaryngeal lymphnodes, struma, thymus hypertrophy, abscess of the mediastinum.

Circulation: Heart weakness with lack of compensation, venostasis on account of the same, arterio-sclerosis, mitral insufficiency and other valvular affections, aneurysm of the aorta, innominate, right subclavian and carotid, pericarditis, pericardiac exudate, thrombus, embolus, infarct and various affections of the heart and blood vessels.

Digestion: Mouth conditions, dyspepsia, indigestion, cirrhosis of the liver, icterus, gall-stones, cholera asiatica, cholera nostra, various stomach and intestinal affections.

Blood: Chlorosis, pernicious anemia, leukemia, pseudo-leukemia, lymphosarcoma, hemophilia, purpura, scorbutus.

Chronic Constitutional Diseases: Rickets, acromegalia, diabetes mellitus, gout.

Acute Infectious Diseases: Measles, scarlatina, varicella, variola, typhoid, influenza, mumps, acute rheumatism, diphtheria, erysipelas, malaria.

Chronic Infectious Diseases: Tuberculosis, lupus, leprosy, glanders, foot and mouth disease, anthrax, actinomycosis, rabies, trichinosis.

Kidney Diseases.

Skin Diseases: Eczema, herpes, pemphigus, impetigo, erythema, urticaria, lichen, miliaria.

Genital Diseases: Vicarious menstruation, masturbation, vasomotor reflex neuroses, puberty, gonorrhea, syphilis.

Eye Diseases.

Intoxications.

Nervous Diseases: Hemiplegia, progressive paralysis, cerebral softening, motor paralysis, tumors and abscess of the brain, meningitis, multiple sclerosis, bulbar paralysis, pseudo-bulbar paralysis, cerebral hemorrhage, cerebral syphilis and tuberculosis, tabes, syringomyelia, paralysis agitans, epilepsy, hysteria, chorea, eneuresis nocturna affections involving the

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cranial nerves, pachy- and lepto-meningitis, acute cerebro-spinal meningitis.

It will be noted that though Freiderich devotes over 300 pages to the relations of the nose, throat and ear to these diseases, which comprise practically the whole range of medicine, he does not say one word of treatment, probably considering that this should in the main be left to general practitioners and specialists in other lines.

This catalogue of diseases shows the utter futility of an effort on the part of the laryngologist to meet the general indications enumerated. To assert that some may be met is to confess that he is unequal to the task of conducting such treatment as successfully as one who makes a closer study of general conditions.

It is very interesting to take up a single topic such as chronic pharyngitis and observe the general treatment advised by various laryngologists. The following are the general plans announced: —

Ball: (4) Interdict alcohol and tobacco, suitable diet, sulphate of soda or Carlsbad salt, attend to general health, mineral waters.

Block: (5) Treatment prophylactic, diatetic, hygienic, climatic, hydriatic, medicinal and mineral springs; mercury, iron, and iodin, and springs containing iron, arsenic, sulphur, and iodin.

Bosworth: (6) Treat gastric catarrh, mineral waters, colocynth and podophyllum for constipation.

Bresgen: (7) Mineral waters.

Coakley: (8) Inquire into the diathesis, seek to correct causal conditions, relieve constipation and congestive diseases of the liver.

Downie: (9) General tonic treatment, dry bracing air, iron and quinin with bitter infusions, saline aperients when necessary.

Fink: (10) Treat sweaty feet with liquor antihydroicus of Brandau, correct disordered circulation, and look after stomach and bowels.

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French: (11) Cure the impaired digestion which is the underlying cause in the majority of cases.

Ingals: (12) Attend to bowels, arsenious acid, saline diuretics, correct dyspeptic symptoms, colchicum.

Kyle: (13) Careful attention to general conditions and to correction as far as possible of any underlying constitutional diathesis or organic lesion, stimulation of glandular secretions of alimentary and urinary tract. For this, granular effervescing phosphate of sodium, compound wine of iodin.

Lennox Browne: (14) Saline purgatives, iron and vegetable tonic; arsenical waters.

Morrell Mackenzie: (15) Confinement to the house, restricted diet, wet compress, mustard poultice, opiates, Turkish bath.

Mandel: (16) Iron and iron salts, iodids, baths, change of atmosphere.

Moure: (17) Mineral springs, sulphur and arsenical waters.

Price Brown: (18) Treat chronic gastric disease, check liquor and tobacco habit, regulate general system, attend to alimentary canal and prescribe appropriate tonics.

Robinson: (19) Treat constitutional condition, appropriate general medication, hygiene.

Rosenberg: (20) Hygienic and dietetic treatment, baths.

Schech: (21) Remove anemia, scrofula, hemorrhoidal conditions, interdict strong alcoholics, highly seasoned or too hot foods, smoking or snuff-taking, protect workers in dusty atmospheres by the use of respirators, enforce rest and limit use of voice in professional speakers, baths, mineral waters, hydropathic cures.

Schmidt: (22) Stops smoking and drinking, mineral waters, cold baths, denial of sugar to diabetics.

Seiler: (23) Build up the system, hygienic treatment, tonic, quinin, iron, phosphorus, caution patients against evil consequences of masturbation, venereal excesses and intemperance.

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Solis-Cohen: (24) Attend to general health, avoid exposure, maintain functions of skin, bowels and other organs as normal as possible, tonics, iron and quinin, phosphoric acid and compounds.

It is evident that in addition to the treatment at mineral springs which can only be accorded to a minority of the sufferers from this disease, attention to the stomach and bowels according to the references here given constitutes by far the most important indication. Let us see what this signifies. Until a few years ago, such an indication would have been a simple one to meet in the light of the knowledge of the time. To-day it is different, for it involves a diagnosis between and a thorough understanding of acute gastritis, chronic gastritis, gastric ulcer, dilation of the stomach, gastroptosis, superacidity and the various and wide-distributed causes of constipation. To do this properly requires a thorough knowledge of the details of stomach contents analysis, physiologic chemistry, physical diagnosis and the latest modern methods of gastro-intestinal treatment. This manifestly falls beyond the province of the laryngologist. So this, that at first sight is the simplest general treatment associated with an affection of the nose and throat, calls for a general practitioner or one who has made the condition a matter of special study. And so we may analyze the general indications in every nose and throat disease until we are forced to the conclusion that our work should be limited to the local manifestations in the nose and throat alone.

In the few rare instances where general treatment results in immediate local change in the nose and throat, the laryngologist may appropriately conduct the general treatment, but under other circumstances it is his duty to refer the case to the general practitioner or to the specialist in whose domain the condition belongs.

Thus mercury and iodids in syphilis of the nose and throat, aconite, atropin, opium, coal-tar products, etc., in acute conditions and salol, salophen and salicylates in rheumatic

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conditions, in so far as their effect is local, are subjects for study and use at the hands of the laryngologist.

Personally, I do not fall into the view that the general system has such an overwhelming influence upon the diseases of the nose and throat. I am more disposed to expect a local cause in the majority of instances. But when the system is found at fault, it is clearly not the function of the laryngologist to correct it with the slight exceptions just indicated; and those who maintain that the general condition is the most important indication for treatment, must, in justice to their patients, refer them to the general practitioner for treatment.

In conclusion, I venture the following as the limitations of the laryngologist in the general treatment of nose and throat diseases: —

1. Acute and chronic conditions of the nose and throat influenced by remedies which have an immediate local effect.

2. Rheumatic nose and throat conditions which exhibit a positive and early relief under appropriate treatment.

3. Syphilis of the nose and throat where general treatment may be best observed by watching its effect upon the local lesion, and where the local process is rapidly destructive.

Even under these conditions, the patient's chances might be improved by assistance from one whose attention is less directed to localism.

DISCUSSION.

Dr. Fryer, of Kansas City: While I agree in the main with what he states as to the treatment of the conditions which have a bearing on the throat and in the general system, still I rather think the tendency of Dr. Loeb's remarks — while I believe him in the main to be right — would have the effect of limiting too much the specialist to his own field. Whether a man is a specialist or a generalist, he must be a generalist first; if he is a clinician first, he will always be a clinician. The trouble with most of the younger men who leave a college is that they take a post-graduate course and become specialists at once.

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DR. H. W. LOEB, St. Louis: My remarks were in the main directed to the differentiating of the work in so far as treatment is concerned. Of course, every specialist should keep up, as far as he can, with the general progress of medicine. But I think it would be attempting too much for a man to try to keep up with the general progress of medicine in every branch. It would be undertaking entirely too much in the face of the tremendous number of associated circumstances, and I, for one, think that the time is coming when this matter should be brought before the profession. If we are going to object to this decided differentiation of work, we may call the attention of our associates to the differentiation of work that is going on in every other line. Whether each individual worker desires it or not, he is forced into a division of labor which gives him one view. We may be making poor specialists of our new crop by thus associating them with one line of work, but I think it is a matter that cannot be avoided.

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REPORT OF CASES OF CHRONIC DEAFNESS FROM "CATARRH," RELIEVED BY TYMPANIC RESECTION.

By Robert Barclay, St. Louis, Mo.

My purpose, in presenting, upon this occasion, a report of cases from my own practice, is to demonstrate to you the relief possible, by tympanic resection, of a large class of cases of chronic deafness from "catarrh," which, from time immemorial, have been considered, and are still, almost universally, being abandoned as intractable and even hopelessly incurable.

As the time at our disposal is necessarily exceedingly limited, I desire, here, to state, very emphatically, that it is not my purpose upon this occasion — and I trust no one may so far ignore my theme as, — to attempt or to provoke any discussion whatever of the pathology, the diagnosis, and the countless possible other methods of treatment of chronic deafness from aural catarrh, it being my aim, upon this occasion, solely to demonstrate to your satisfaction that tympanic resection can and that it does relieve cases of chronic deafness from "catarrh."

In selecting from my clinical records the material for this purpose, I have been guided mainly by the duration and obstinacy of the various cases presenting — regarding as intractable or incurable, in popular estimation, such cases only as, after having stubbornly resisted the curative influence of all ordinary remedies, at the hands of presumably careful practitioners for years, had at last been abandoned as hopeless — those cited below, having been diseased twenty or twenty-five years. In my final selection, I have given preference to those cases whose clinical features are of the char-

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acter most generally encountered; and as the physical conditions in the various cases seemed to be those universally recognized as characteristic of chronic aural "catarrh," associated with abnormal tension and mobility of the conducting mechanism of the ear, I have, with slight exceptions, omitted all mention of them; preferring to report each case in its clinical aspect as it seemed to affect the patient and, then, to demonstrate the relief that, after tympanic resection, was experienced by him.

Taken thus, the cases were characterized, mainly, by deafness, — particularly to low-pitched sounds; worse hearing in quiet places, — better hearing in a noise; abnormally moderated or low-speaking voice; ringing and other noises in the head and ears; and aural distress, — a feeling of tension or weight within the ear. I ask your attention, particularly, to the low-speaking voice, and better-hearing-in-a-noise, of these cases of chronic deafness from "catarrh," for it is my opinion, — I trust you will carry away with you to-day this statement, if nothing more, — it is my opinion, and clinical experience has served but to confirm it, that cases of chronic deafness from "catarrh," who habitually speak in an abnormally moderated or low tone of voice, who hear better in a noise — no matter how many years they may already have been affected, and notwithstanding that every possible other remedial resource may have been tried in vain, may be relieved by tympanic resection, proportionately to the distinctness of these symptoms. I say, that this is my opinion, — as yet, confirmed by practical experience with the operation itself; — and in my conclusion, I shall reiterate it.

Another characteristic feature of these cases is the evident impairment of audition upon the opposite side by catarrh of one ear; wherefore we are always called upon to consider the interests not only of the one ear, primarily affected by chronic "catarrh," but of its fellow of the opposite side; it having been proven conclusively, by clinical experience, as in the following cases, that the hearing of the second ear

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may ofttimes be saved by tympanic resection of the first ear, even where the latter may be in a condition offering little hope of restoration to its own original function. This may be fully accounted for by the fact, — that tympanic resection serves to relieve tension as well as to remove obstruction and restore mobility in the conducting mechanism of the ear.

Regarding the procedure herein termed "tympanic resection," — or surgical operation upon the conducting mechanism of the middle ear, — it may be said, that very limited encroachment upon the impeded structures of the tympanum, frequently serves to liberate these from their bonds, particularly in those cases where the process of tissue metamorphosis has remained circumscribed. In still other cases, the structural changes will have involved a larger portion of the essential conducting mechanism of the ear than can be restored to normal mobility and tension by severance from their normally adjacent, but abnormally attached parts. In such cases, the procedure — liberation of the deeper portion of the auditory conducting apparatus, still movable, from the permanently immobilized portion without, with provision for free entrance of aerial sound-waves to that deeper mobilized portion — may restore hearing. My own experience has been that the operation most frequently called for is that effecting the removal of the drum-head, malleus, and incus — the stapes, also, being occasionally removed. The appropriate details of such surgical procedures are, however, of course, peculiar to each individual case, and can be justly estimated and properly executed by anyone practically familiar with the surgical anatomy and the physiology of the ear, and thoroughly skilled in the technique of such difficult, deep aural surgery.

To avoid any possible misunderstanding, however, and to avert useless discussion, it may be as well to state, right here, that these remarks have no reference whatever to cases which, after thorough investigation and examination, are presumably or manifestly, incurable by such operative procedures. A

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moment's reflection will show us how irrational it is to condemn a potent agent, such as this, as harmful or useless, simply because of results lamentable, or disappointing in themselves, arising from the indiscriminate or inappropriate employment of such agent; when, instead, propriety and reason affirm of this, as of every other resource, that its value lies not only in its application, but in its proper application. And where, occasionally, we meet with marked instances of the advantageous application of a remedy obviously so beneficent, such as I shall report here, failure and disappointment should but strengthen our determination to perfect the search for the exact indications and contra-indications for its employment.

I am well aware that there are etiologists who appear to have given up the operation upon the middle-ear structures in chronic deafness from "catarrh," disappointed in their results. Others, however, — and among them myself, — find, that the mere relief of tension, always abnormal, in these cases, is sufficient to justify tympanic resection, inasmuch as it relieves the labyrinth within of otherwise inevitable still further secondary invasion, and preserves the integrity of function of the auditory nerve, not only in this ear, but in its fellow of the opposite side, thus rescuing, if not indeed, augmenting the hearing. So much, as to the advantages of relieving tension, in such cases, by tympanic resection. As regards the advantages of increased mobility in the conducting mechanism by such procedure, experience shows, that this invariably improves the hearing, not only of the ear operated upon, but of that of the opposite side, as well.

By many, it has long been supposed, that removal of the drum head and ossicles must certainly be attended with suppuration, closure of the passage by a new membrane, and deafness. Such is not the experience of the best operators. On the contrary, after this operation, the exposed tympanic mucous membrane undergoes, as it were, dermoid transform-

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ation; improved methods have enabled us to prevent the newly formed or substitutive membrane; while, if there has been a loss of mobility at any part of the auditory conducting mechanism (which mechanism, in response to the entering sound-waves, moves as a unit, if it move at all) sufficient to cause marked deafness, removal of that part constituting the obstacle to entering aerial sound-waves, with liberation of the deeper, movable portion, will not only check the progress of the disease itself, but invariably improve the hearing.

Whatever the opinions of others respecting tympanic resection in these cases, and however differently considered, the clinical results of my own practical experience with this method, as shown in the report of cases cited below, will, I trust, be deemed sufficient excuse for having attempted to demonstrate its advantages to you upon the present occasion.

Coming now to the case histories, I beg to report to you, first, one of

*Deafness of more than Twenty Years' Duration, Due to "Catarrh," Relieved by Tympanic Resection.**

This lady, thirty-three years old, had been deaf from childhood, one of her most remote recollections being that of having been told, when a little girl, by her teacher, "that she didn't hear well, and that she ought to go and get her ears fixed by a doctor!" She, however, became fully aware of this infirmity as early as when twelve years old; and she noticed that this gradually grew worse, her deafness being attended with noises in the head and ears, modified voice, and other phenomena or aural catarrh. She was treated by various physicians,—among them, one of the most eminent

* Reported as "Case IX," in a paper read before the St. Louis Medical Society of Missouri, June 10th, 1899, and published in the *Medical Review*, St. Louis, Mo., July 15th, 1899, under title of "A Report of Actual Cases, Demonstrating the Relief, by Modern Methods, of Patients Hopelessly Afflicted for Many Years with Deafness from Catarrh, Running Ears, Etc."

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of the country's nose-throat-and-ear specialists. Under this gentleman's directions, she sprayed the nasal cavities with Seiler's solution daily with regularity for the last four years. Notwithstanding this, she suffered a great deal, particularly in the morning, from the dropping of discharge at the naso-pharynx, and from other symptoms of chronic nasal and pharyngeal inflammation,— such as obstruction of these passages with crusts. There was an ulcerated perforation of the nasal septum, in which, also, these crusts gathered. A small, ulcerated spot upon the left cornea, near the lower, outer edge of the iris, was attended with neuralgia, which caused her great discomfort, and prevented the free use of her eyes.

With either ear, she could hear a very loud voice at about twelve feet, and loud whisper at about one foot distance. The forty-eight-inch watch was inaudible by air conduction.

That you may better know the character of the instruments with which the other auditory reactions were taken in this and the following cases, I beg to state, that the set of Koenig's Rods employed, have a range of from twenty-thousand to sixty thousand vibrations a second, and were made specially for me by Messrs. Buff & Berger, of Boston, under the direction of Dr. Clarence J. Blake of that city.

The Galton Whistle used is of the pattern suggested by Dr. E. B. Dench of New York, which extends its range beyond that of the original Galton instrument. It has a range, the doctor states in his "Treatise on the Ear," of from about sixteen hundred and seventy-seven vibrations a second to about forty thousand vibrations a second, and upward, beyond the limits of normal audition; the increased length of the instrument augmenting its compass, to include the tones of the higher tuning-forks. This Dench-Galton Whistle was selected for me through the courtesy of Dr. Dench, the original designer of this modification.

The set of turning forks employed, were six in number: Dench's large fork for determining the lower tone-limit, and

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the series of five forks recommended by Hartmann, the latter encompassing the five octaves of the human voice, while the former, (Dench's) embraces the two octaves just below these, reaching, practically, the very lowest normal tone-limit, — a range of seven octaves in all. Each fork is tuned to the note C; and they give fundamental tones of sixty-four, one hundred and twenty-eight, two hundred and fifty-six, five hundred and twelve, one thousand and twenty-four, and two thousand and forty-eight vibrations a second, differing from each other by an octave. The three lowest forks have adjustable weights upon their prongs, thus giving us the means of producing for experimental purposes, other, than their fundamental tones, the second and third forks of my set having the pitch indicated at the various parts of their prongs. The weights upon the lowest or Dench's fork give it a range even below twenty-six vibrations a second; thus representing the two lowest octaves. This set of tuning forks, seven octaves in all, were made to order by Mr. Kaysan of Brooklyn, under the immediate supervision of Dr. H. A. Alderton of that city, who, before sending the forks, kindly prepared for me a chart of their normal reactions, by comparing them with his own, whose normal reactions had previously been determined by testing upon thousands of ears presumably healthy.

So much for the instruments. But, I feel that I should not let this opportunity pass unimproved, publicly to make special and grateful acknowledgment of the gracious kindness of these distinguished otologists, in having so effectively aided me in procuring perfect instruments of the pattern which each has made famous by his own skillful use and exposition.

To return to the auditory condition of our first patient,— the duration of hearing, by the natural channel, for tones of certain pitch, and initial volume, gradually decreasing, from the lowest audible octave to the highest one of the human

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voice, taken with Dench and Hartmann's tuning-forks, and compared with the normal may be presented as follows:—

The lowest octave was inaudible to both ears. The next octave was heard by the right ear, its upper part only being heard by the left. The duration of hearing in the right ear, however, for this, was reduced to 50% of the normal. The lower tones of the third octave, or lowest of the human voice, were heard, by the right ear, less than 20% of the normal; by the left, less than 18%. Lowest tones of the fourth octave, with the right ear, about 20%, with the left about 23%. Lowest tones of fifth octave, with right ear, about 76%; with left ear, about 65%. Sixth octave, right ear, about 67%; left, about 38%; and the seventh octave, or upper one of the human voice, with right ear, about 58%; with the left, about 39%, of the normal.

Under hygienic measures, with internal and local medicinal treatment, the annoying symptoms of the naso-pharyngitis disappeared, the affection of the eye entirely and permanently subsiding without local treatment, within the first two weeks, while the edges of the nasal perforation cicatrized nicely.

Although indications pointed to this as a probable so-called mixed or complex case of middle-ear fixation with impairment of nerve function — apparently a case of middle-ear sclerosis — one phase of aural "catarrh,"— tympanic resection was proposed; and being favorably accepted, the operation was done, first, upon the left, and four weeks later, upon the right ear.

Twenty days after the operation upon the left ear, a repetition of the former tests showed, that the second octave, hitherto inaudible to this ear, was now heard by it for about 82% of the normal; the third octave, about 45%, — a gain of 27%; the fourth octave, about 33%, — a gain of 10%; the fifth octave, about normal, or 100%, — a gain of 35%; the sixth octave about 44%, — a gain of about 6%; and for the seventh octave, or upper one of the human voice, about 42%, — a gain of about 3%.

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The several tests made upon the other, the untouched right ear, to note any changes that might have been effected there, showed a gradual improvement, the last testing before its own operation being made about twenty-four hours after that done upon its fellow on the left side. It was then found, that the untouched, right ear could hear the second octave about 95% of the normal — a gain of 45%; the third octave, about 40%, — a gain of about 20%; the fourth octave, about 40%, — a gain of about 20%; the fifth, about 76%, — as before; the sixth, about 88%, — a gain of about 21%; and for the seventh octave, or upper one of the human voice, about 71%, — a gain of about 12%. Twenty-five days after the operation upon the second, or right ear, the tests showed the hearing to be as follows: —

HEARING.

Right Ear.				Left Ear.			
Octave.	Per cent of normal.	Gain since last test.	Gain since original test.	Octave.	Per cent of normal.	Gain since last test.	Gain since original test.
Second.	95	0	45	Second.	86	4	86
Third.	50	10	30	Third.	45	0	27
Fourth.	46	6	26	Fourth.	39	6	16
Fifth.	89	13	13	Fifth.	100	0	35
Sixth.	100	12	33	Sixth.	60	16	22
Seventh.	100	29	41	Seventh.	65	28	26

Besides these analytical tests, the hearing for all low-pitched tones of whatever character, and for the human voice, particularly that of men, was found greatly improved. Others, as well as the patient, noticed the improvement. The noises in the head were not so distressing; the feeling of tension in the ears had been relieved; the naso-pharynx was no longer troublesome; the eye symptoms remained entirely relieved; and hearing was still steadily improving; when the patient was permitted to revisit her distant home.

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The next case is one of

*Deafness of Nearly Twenty-five Years' Duration Due to "Catarrh," Relieved by Tympanic Resection.**

A very deaf lady, forty-six years old, consulted me, stating that she had been thus deaf from "catarrh" for nearly twenty-five years.

The trouble had begun while nursing her seven-months-old baby; when, for weakness, she had been much overdosed with quinine, the last dose, of ten grains, being taken one morning just before going to the breakfast table, when, before the meal had been finished, she became so deaf as to be unable to understand speech across the table.

Within a day or two noises began in the ears — snapping, cracking and buzzing — which grew steadily worse, causing her great distress. Treatment failed to relieve her, and headache and dizziness, sometimes severe, supervened. The ears gradually grew deafer, and, later, very painful at night, until about nine years later, when, under a prominent Eastern nose-throat-and-ear specialist, she took daily treatment for ten weeks. This gave her some slight relief, until after a dentist had treated her diseased teeth, when the ear pain ceased at once. Very significantly, at the time she originally became deaf she was cutting her third molar, or wisdom teeth, suffering not only from very tender gums, but from sore throat and swollen cervical glands also.

Although slightly relieved for awhile by this specialist's treatment, the shock caused by the loss of her home by fire caused nervous depression, attended by increased deafness and aggravation of the other symptoms, pain excepted. Very severe confinements, the death of her three children, and other

* Reported as "Case X" in a paper read before the St. Louis Medical Society of Missouri, June 10, 1899, and published in the *Medical Review*, St. Louis, Mo., July 15, 1899, under title of "A Report of Actual Cases, Demonstrating the Relief, by Modern Methods, of Patients Hopelessly Afflicted for Many Years with Deafness from Catarrh, Running Ear, etc."

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trying circumstances, still further overtaxed her weakened nervous system until, from sheer exhaustion she was abnormally prone to excessive perspiration, was in consequence easily chilled, and "caught cold frequently, gradually growing deafer and deafer, especially during the winter, and with every "damp spell."

At the time of our first consultation, it was noted that she spoke in a very low and hollow tone of voice. Then, all sounds were heard by her better with the right ear, which could be made to hear a loud whisper. The left ear was practically deaf to all ordinary sounds except "sharp" ones. Upon a moving street car, she could hear so much better, then nearly everything was heard by her, even conversation certainly not intended for her ears. After leaving the car, this improved hearing persisted for a short while, when she became deafer than before and suffered from headache. Nervous excitement was always attended by better hearing. The clacking noises of a machine shop always caused earache. Sounds of horses' hoofs were inaudible to her unless standing right at the curbstone. The motorman's gong and conductor's signal bell were audible to the left ear from the pavement; to the right from an open second-story window above; these sounds being inaudible to her when the window was closed. Only the very highest pitched tones of a large No. 2 Regina music-box were heard by her with her ear just off the box; the music being audible only upon actual contact with the box. By careful harkening, she could hear, with the right ear, newsboys shouting across the street; with the left only when directly alongside. Even with both ears, she could not hear the singing of a choir outside the open door of her room; nor could she distinguish the words, nor any but the highest tones of friends singing in her own parlor. Her own front door-bell was inaudible to her unless near by it; and she could not distinguish the sound of a horse or vehicle crossing a three-plank bridge one hundred and fifty yards from her home. Band music was inaudible to her, unless

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but a short distance away. The rustle of leaves in the trees and the song of a locust could not be heard with the left ear; nor could she hear the clang of a scissors-grinder's advertising chime as he pushed his cart beneath her second-story window. Only when alongside could she hear the lighting of a parlor-match. Her husband's voice was heard by the left ear at about two feet; my own ordinary voice at less distance. Tuning-fork tests showed that her hearing was reduced seventy-five per cent for single tones in the middle octave of the human voice. The watch was heard by either ear on pressure contact only. The lower tone limit of hearing of the right ear was a trifle below sixty-four vibrations a second; of the left, considerably above this.

Concealed from me at the time was the fact of her suffering additionally profound deafness and severe high-pitched ringing in the ears, with profuse menorrhagia, at each return of her monthly sickness; and that the exsanguination was attended with exhaustion, and even dizziness, with fainting, upon one occasion actually ending in a so-called "dead-faint."

Some time after the second ear had been operated on, the family physician, in joint attendance upon the patient, discovered that the menorrhagia was due to a bilateral laceration of the cervix, with subinvolution of the uterus. This was later operated upon by him, with prompt and entire relief of the attendant symptoms.

With the patient's consent, the left or worse ear was operated upon — nearly two years ago, now, the right seven weeks later — the left partially regenerated drumhead being removed at this time. In each instance, the nervous condition of the ear of the opposite side was at once appreciably improved, and proportionately to the increased conductivity in the ear just operated upon. Gradually they have approached a similar condition, until, at present date, there is, as far as I can learn, no marked difference between the hearing of the two ears.

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After the operation on the worse, or left ear, upon recovering from the anesthetic, in bed, the patient spoke of hearing a flood of noises, and first noticed the sound of horses' hoofs coming through the open window of her second story room. About the third evening later, she recognized the voices of newsboys, crying their papers out on the street below. About the fifth evening, she heard the newsboys whistling outside. One week after the operation, she heard the choristers singing in the hall outside her room; and, standing in the doorway, could hear their words also. From a house, one-half block opposite her window, she could distinguish the echo of a school bell, five blocks away. The sound of the car-bells was now audible to her, from her bed. She could hear my ordinary voice at three or four feet away; and her husband's, at six feet. A little later, she could recognize the song of the locusts and the sound of leaves rustling in the wind. Then she found she could distinguish and recognize, from her bed, the different newsboys' voices in the street below. The clang of the two higher of the three bells forming the scissors-grinder's advertising chimes were heard by her soon after the operation; the third, a low-pitched one, about five or six weeks later. One day, about this time, while sitting reading, she was startled by the sound of a pistol shot, *as she supposed*, coming from the hall. It proved to have been nothing but the striking of a parlor match outside the open door.

Seven months after the first operation, her husband informed me, that her hearing had still further improved, so far as to enable her to hear her front door-bell from the attic of her home, with all doors closed; that she, quicker than he, invariably recognizes the sound of a horse or vehicle crossing the three-plank bridge one hundred and fifty yards from their home; that she can at once recognize any tune played by her Regina music-box, even when in the adjacent parlor; and that she very frequently overhears, even at twelve or fourteen feet distance, disputes and conversation which others believe

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they have concealed from her by lowering their voices, as they supposed, sufficiently therefor. Within the past week I learn through her husband and her physician, that upon one occasion recently, others observed that she had her attention attracted by the fall of an ordinary brass pin which dropped from her neckwear while standing upon her wooden porch at home; and that, upon their asking whether she had actually *heard* the fall of the pin or not, she replied that she *had* heard it.

The latest report on the case is, that the hearing still continues to improve; and that the annoying symptoms — noises in the head and ears, etc. — which were relieved by the operations two years ago, have not returned.

My third and last case to-day, is one of

Deafness of about Twenty Years' Duration, due to "Catarrh," Relieved by Tympanic Resection.

A gentleman, thirty-one years old, who had "been more or less deaf for many years" — "it must be 18 or 20 years," he said — evidently from "catarrh" — having heard of the successful results of tympanic resection in cases similar to his own, submitted himself for examination, with a view to ascertaining whether or not he himself might not be benefited by some such surgical procedure.

As long as fourteen years before, he had visited, three or four times a week, for eight or nine months, a prominent otologist in St. Louis, at whose hands he had received every care and attention; but becoming dissatisfied with results, he "took nasal and aural treatment," as he expressed it, "from a quack." He then turned for relief to a physician in San Francisco, Cal., who treated him constantly for three or four months. Still hopeful, he then "tried" Christian Science; and, finally, in desperation, had even "braced the game" of one of our local, ever-prosperous "osteopaths."

His principal symptoms were deafness, noises in the head

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and ears, a strange reverberation of his own voice in his ears, worse hearing in quiet places, and a feeling of weight or pressure within the ears. "The deafness had gradually increased until" as he expressed it "the right ear was practically deaf;" and he "was unable to hear a conversation over the telephone in the right ear."

From the fact that he spoke habitually in an abnormally moderated or low tone of voice, and found that he could hear better when in a noisy place, it was presumed that the deeper portion of the auditory conducting-mechanism and the labyrinth were still functually active, and his chances of relief by tympanic resection were so far deemed favorable; and as physical examination, and as the reactions to the ordinary tests of hearing, in his case, did not seem discordant with this opinion, he was advised to submit to tympanic resection of his worse —the right ear; which he promptly consented to do without needless delay. Two days before the operation, his hearing, by the natural channel, was as follows: —

Right ear (the one to be operated on): heard loud voice only at one foot distance. A forty-eight inch watch was unheard by it even upon pressure contact. The Dench-Galton Whistle was heard at 1.1; and the upper tone-limit for Koenig's Rods was found to be 5,000 vibrations a second below the normal. The duration of hearing, by the natural channel, for tones for certain pitch, and initial volume gradually decreasing, from the lowest audible octave to the highest one of the human voice, taken with Dench's and Hartmann's Tuning-forks, and compared with the normal, may be presented as follows: —

The two lowest octaves were inaudible. The lower tones of the third octave, or lowest of the human voice, were heard about 18% of the normal. Lowest tones of the fourth octave, about 37%. Lowest tones of the fifth octave, about 39%. Sixth octave, about 51%; and the seventh, or upper octave of the human voice, about 74%.

The left, or untouched ear, before the operation on its

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fellow of the opposite side, could hear, by the natural channel, ordinary voice and ordinary whisper at one foot distance. A forty-eight inch watch was unheard by this ear also, even on pressure-contact. The Dench-Galton Whistle was heard at 1.1; and the upper tone-limit for Koenig's Rods was found to be 5,000 vibrations a second below the normal. The duration of hearing by the natural channel, for tones of a certain pitch, and initial volume, gradually decreasing, from the lowest audible octave to the highest one of the human voice, taken with Dench and Hartmann's Tuning-forks, and compared with the normal, may be presented as follows:—

The two lowest octaves were inaudible. The lower tones of the third octave, or lowest of the human voice, were heard about 34%. Lowest tones of the fourth octave, about 37%. Lowest tones of the fifth octave, about 72%. Sixth octave, about 66%; and the seventh or upper octave of the human voice, about 65%.

Such was the state of the hearing two days before tympanic resection of the right ear.

After suitable preparation, the operation was begun under chloroform anaesthesia; but the patient not bearing the anaesthetic well, its administration was discontinued; and the operation was finished with Cocaine Hydrochlorate solution, locally. It consisted in the removal of the drum-head, malleus, incus, and all but the footplate of the stapes. An appropriately perfect aseptic technique, followed by closure of the outlet of the auditory canal with Iodoform gauze, and no further meddling,— mark this! — no further meddling, effected surgical recovery within a few days; but, it being at the time severe and variable, wintry weather, the patient was not allowed to go and resume his ordinary occupation until the fifth day after the operation. In the course of the operation, immediately after division of the incudo-stapedial joint, others in the operating room remarked that the patient spoke louder.

Upon the second day after the operation, he could, with

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the ear that had been operated upon, hear the forty-eight inch watch at one-half inch; upon the third day, at three-quarters inch distance. While, with the undisturbed ear, upon the corresponding days, he could hear the watch upon contact, and at one-quarter inch distance; this watch before operation upon the right ear, being inaudible to both ears, even on pressure-contact. Upon the third day after operation, the patient's uncle volunteered the opinion, that the patient heard much better and spoke louder than usual. Shortly after operation, the patient discovered that he could hear more distinctly the rumbling and gongs of neighboring street cars. On the eighth day after the operation, it was found, that the patient could already hear with the operated ear, a somewhat elevated voice at thirteen feet; whereas, before operation, he could hear a loud voice only at one foot distance. The Dench-Galton Whistle was now heard with the operated ear, 0.2 higher than before the operation, a trifle above the average normal limit. The range of hearing for Koenig's Rods had been elevated 5,000 vibrations a second, clear to the normal. With the Dench's and Hartmann's Tuning-forks, it was found, that this ear could now hear as low as the middle of the very lowest octave. All of the second octave was now audible in 54% of normal reaction. Before the operation, these two octaves were entirely unheard by this ear. For the lower tones of the third octave, or lowest of the human voice, there was a gain in hearing of 29%. For the lower tones of the fourth octave, there was a gain of 8%. For the fifth octave, a gain of 8%. For the sixth, a gain of 23%; and for the seventh, or upper octave of the human voice, a gain of 26%, as it was found a trifle more sensitive than the average normal, at this pitch.

Upon the thirteenth day after the operation upon the right ear, the left one was tested as before; when it was found that a slightly elevated voice was heard at thirteen feet by it, somewhat better than by the right ear. The forty-eight inch watch, inaudible by both ears, before the operation,

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was now heard by this ear, at a distance of one-half inch. The Dench-Galton Whistle, which upon the fifth day after the operation, had been heard considerably above the average normal, 0.2 higher than with the operated ear, was now heard at the normal. The upper tone-limit of hearing for Koenig's Rods, however, had remained unchanged, at 5,000 vibrations a second below the average normal. Tests with the Dench's and Hartmann's Tuning-forks showed that this ear could now hear down in the second octave, altogether inaudible before the operation, at 41% of the normal. For the sixth octave, or fourth of the human voice, hearing had increased 8% of the normal; and for the seventh or highest octave of the human voice, a gain of 9% was found.

The improvement in this patient's hearing has been reported to me as remarkable by a number of his friends.

This report, demonstrating, by the results of these ordinary objective testing methods, the relief affected, may seem the more nearly complete, if closed with an extract from a statement made by the patient himself as a summary of his own impressions as to the results of the operation in his own case. He says: —

"As you are aware, I have been more or less deaf for many years, the exact number, I cannot state, but it must be 18 or 20 years. This deafness, supposed to be the result of catarrh, had gradually increased until the right ear was practically deaf. The operation which you performed on this ear some weeks ago in which the drumhead was removed, has increased the hearing of the right ear very materially."

"For example, before the operation, I was unable to hear a conversation over the telephone in the right ear, whereas now, I can hear over the telephone practically as well in the right ear as in the left."

* * * * * * * * * * *

"The operation, while of course not restoring my normal hearing, has been a success in every sense of the word. My friends, without exception, notice the material improvement in my hearing since the operation."

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With this case, I would conclude, trusting that the gratifying experiences that you have just heard detailed — and which have frequently been duplicated by others — may serve to direct your attention more closely to the *rationale* of tympanic resection for the relief of chronic deafness from "catarrh;" and that, if, among such apparently intractable and hopeless cases, you be so fortunate as to encounter one, who, in addition to his deafness, speaks habitually in an abnormally moderated or low tone of voice, and can hear better in a noise, you will not let the opportunity pass unimproved to encourage him to submit himself for a thorough examination of his case, hopeful of relief by tympanic resection; for it is my opinion—I would repeat—that cases of chronic deafness from "catarrh," who speak habitually in an abnormally moderated or low tone of voice, who hear better in a noise, — no matter how many years they may already have been affected and notwithstanding that every other remedial measure may have been tried in vain—may yet be relieved by tympanic resection, proportionately to the distinctness of these two symptoms, — an opinion which has invariably been confirmed by my own practical experience with the operation itself, and which, if subsequently found, as anticipated, without exception, will prove a valuable addition to our store of knowledge, not only in the realm of diagnosis and prognosis, but in that of therapeutics, as well, of obstinate chronic aural "catarrh;"—and we may yet see the veil lifted, which excludes from an enlarged field of usefulness and social life amongst us, a large class of victims of this ailment who, from time immemorial, have, almost universally, been regarded as intractable, if not indeed, hopelessly incurable.

DISCUSSION.

DR. J. H. THOMPSON, of Kansas City: I am very much inclined to think that in most of these cases the trouble is not so much in the middle ear

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as in the internal ear. The otologists heretofore have discovered that in very many of these cases where the trouble has been relieved it has been but a temporary relief, but there are cases, in which, as the doctor says, the patients will be very much relieved by this method; and certainly if we can destroy the tinnitus and annoying noises and double voice and deafness by this means we are to be congratulated.

DR. B. E. FRYER, of Kansas City: I think that the report of one case in which good is accomplished is worth much more than a detail of 100 cases which show no improvement, hence I think Dr. Barclay's paper worthy of much careful consideration.

DR. M. F. WEYMAN, of St. Joseph: The question that presents itself then is are those symptoms that Dr. Barclay enumerated going to be relieved by the procedure. It is true that he tells us that there has been relief in some cases, but are all cases going to be improved, or will a considerable number of these patients be left in a worse condition than before?

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THE BACTERIOLOGY OF SCARLATINA.

By R. B. H. Gradwohl, St. Louis, Mo.

A few months ago I presented to the Medical Society of City Hospital Alumni of St. Louis a brief report of my researches into the bacterial cause of scarlet fever. The report was necessarily brief, for the reason that while the bacteriologic part had been fully studied, I had at that time only a few cases of the disease under observation and so I could not be as positive in my conclusions as I would otherwise wish to be. Since that time, however, I have had an opportunity to study more cases of the disease and so can speak with greater freedom.

I will state in the beginning that many attempts have been made in the past to discover the bacterial cause of scarlet fever, as it has been supposed to be a microbic disease for a long time. Ever since the advent of bacteriology into the realm of medicine, it has been assumed that this disease is caused by a specific organism, but all attempts at finding it have been futile. It is true that several investigators have launched forth divers bacteria on the sea of medical literature as bona fide bacterial causes of this disease, but each in turn has been deposed from the seat upon which its respective discoverer has placed it. Among those who have worked along these lines, and have isolated bacteria which were supposed to be the true cause of the disease, are Crajkowski, Klein and Edington. Klein laid special stress upon the streptococcus which he isolated from scarlatinal cases. It was found, however, that Klein's organism is but an accidental factor in the disease, or, at best, a complicating agent. While nothing definite was found as to the real cause of the disease, we have

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known for some time something about the virus of scarlatina. We know that the virus of scarlatina is much more resistant than that of measles. It adheres for months to the clothing worn and the rooms occupied by the sick. Infection with scarlet fever, in accordance with clinical experience, occurs not only through direct contact with the sick or with articles belonging to them, but also through breathing the air in rooms saturated with the virus of the disease. The period of incubation is of varying duration (from two to twenty-four days). Even towards the end of this period, scarlet fever is infective, and it remains so until the cessation of desquamation and for weeks longer.

In June, 1899, Dr. Wm. J. Class, of Chicago, published a report of his isolation of a diplococcus from the blood, throat and scales of scarlet fever patients. I met Dr. Class last summer and determined to follow out the lines of work laid down by him. During the past winter, I have made bacteriologic examinations of scarlet fever patients in the St. Louis City Hospital, in the Female Hospital, and have had throat cultures to investigate at the Health Department Laboratory. I worked with ten cases of scarlet fever in the City Hospital and easily succeeded in finding the diplococcus first described by Class in every case. The cultures were made from the blood, from the throat, from the scales, and in the last two cases, from the urine. Blood cultures were pure, but those from other sites were usually contaminated, so that resort had to be made to the flowing plate method of cultivation. Besides these cases, I studied fifteen others in the Female Hospital, and found the organism in all instances. In addition to these cases, I found it in cultures made from the throat and sent into the St. Louis Health Department Laboratory for "diphtheria diagnoses." Further investigation into the history of these cases showed that in every instance where the diplococcus scarlatinae was found, the case was not diphtheria, but was really scarlet fever.

In these cases, the diplococcus scarlatinae was found in every

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stage of the disease, from the first week until the time of convalescence. It was found in every case where blood cultures were made. It was also found in the scales, but had to be separated from other organisms by plating.

I will now say something about the biology and morphology of this organism. As it is a "new organism" I thought it advisable to describe it fully according to the plan laid down by the American Public Health Association. The morphologic characteristics of this organism constitute the most interesting feature about it. It is a diplococcus of varying size, changing its form and size under artificial growth conditions, attaining a large size with frequent transplantations, sometimes becoming so large that it looks like a diplobacillus. It can be made to return to its original size by passing it through the body of a susceptible animal, such as the mouse.

PATHOGENESIS.

It is pathogenic for mice, guinea-pigs, swine (and white rats when inoculated into them intra-peritoneally). It is non-pathogenic for dogs and cats and rabbits. I could not affect dogs or cats or ordinary rats by subcutaneous inoculations. Domestic mice are easily killed, sometimes within eight hours, by subcutaneous injection of a small quantity of an agar culture rubbed up in a little sterilized water. The organism was easily recovered from the organs of these animals after death, and in each instance proved to be more virulent than it had been before its passage through the dead animal from which it was recovered. Microscopic examination of the kidneys of these inoculated mice showed a distinct glomerulo-nephritis.

Another point of interest noted in the work with mice was this: If a healthy mouse was put into a cage in which an inoculated mouse had been kept, this healthy mouse sickened and died, showing the diplococcus scarlatinae in its organs at autopsy. This illustrates the contagiousness of the disease set up by this organism and corresponds nicely with our preconceived notions of the virus of the disease.

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Gineapigs inoculated intraperitoneally will die within ten days, and will show gross signs of the acute nature of the infective agent in the shape of a severe acute nephritis. White rats and mice also are susceptible, dying in from five to ten days after inoculation.

Having noticed that Behla, in the *Centralblatt f. Bacteriologie* reproduced a scarlatinaform rash in swine by inoculating them with the blood of scarlet fever patients, Dr. Class utilized these animals for experimental work and succeeded in reporting the disease in them. I inoculated two young swine with the diplococcus scarlatinae, a liberal amount of the broth culture mixed with the agar culture in water being poured into the large vein on the swine's ear. A rash appeared in the first pig within eight days after inoculation. Scaling was noticeable. The animal recovered. It was killed and an acute nephritis found. The diplococcus scarlatinae was recovered from the blood and from the scales. Similar results were demonstrated with the second pig.

I desire to call attention to the interesting features of the case occurring at the Female Hospital. Here infection began in one patient who had typical attack of true scarlatina. The diplococcus scarlatinae was found present. Then began an epidemic of sore throat at the hospital, the first one to be attacked being the nurse in charge of the scarlet fever patients. This woman had a severe attack, considerable angina and was laid up for several weeks. Culture made from her throat showed the diplococcus scarlatinae. There was no eruption, however. Other patients and nurses to the number of fifteen were similarly attacked. In every case, cultures from the throat were of the diplicoccus variety. In but one case was the diplococcus scarlatinae found in the patient's blood. These cases were undoubtedly scarlatina without an eruption. It is a clinical fact that cases of scarlet fever may run their course without skin manifestations.

The uniformity of the results in these case and the interesting points in the inoculation experiments, together with the

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extensive work of Class along this line, lays some claim at least to the right of calling this micro-organism the specific cause of scarlet fever. The discovery undoubtedly has more authentic data to support it than has any one of the previous reported organisms of the disease. In the light of the results obtained by Class and in connection with the observations made by me, I feel no hesitation in applying the name of "Diplococcus Scarlatinae" to this micro-organism, with the firm belief that that name will cling to it and that its relationship to the disease scarlatina will be borne out in this name by further and more extensive clinical and bacteriological observations.

DISCUSSION.

DR. B. E. FRYER, of Kansas City: I would like to ask the doctor if, in his experimental work in cultures, he has made any experiments with taking blood from people who were becoming immune or who had become immune and getting anything like an interference with the culture or clumping in the blood serum — I do not mean a clumping like blood from typhoid fever, still a clumping from the culture which occurs in these immobile bacteria.

DR. GRADWOHL: That was not tried.

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REPORT OF A CASE OF ACUTE YELLOW ATROPHY OF THE LIVER.

G. C. CRANDALL, ST. LOUIS.

The rare occurrence of the following case induces me to make a somewhat detailed report of its clinical features and post-mortem findings. According to Osler, only about 250 cases have been recorded. This small number I believe is only a fraction of the cases which actually occur, the condition not being always diagnosed, because of the general symptoms which may simulate other diseases, and failure to observe the special clinical nature of the liver and urine. The fact that a disease is rare always renders its recognition less probable, because of the natural tendency to confuse any common general symptoms with other diseases more frequently met, and because of the lack of familiarity with the special symptoms.

The obscurity of its etiology, unlike many diseases, gives us no definite early clew to its identity, consequently when recognized it is usually in the advanced stage; or, perhaps, not until the autopsy reveals the pathologic evidence.

I was called to see the following case in consultation a short time before death, and was with him at the time he died: —

Family History. — Grandparents all lived to a fair age — 57, 70, 72 and 73 respectively. No history of cancer or constitutional diseases ascertainable on either side. Mother died at 48 of some slow fever, nature not definitely known. Father living, 68 and well. Four sisters, ages 17 to 27, all living and well. Two brothers, one 12, living and well; one died in infancy of whooping cough. Patient, who was a medical student, 23 years of age, native of Texas, Brazos Valley. He had spent his life on a farm. At the time of his illness he

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was attending college in St. Louis, Mo., having been there one month. He used tobacco moderately, used no liquor, and was a man of excellent habits. He was a healthy appearing young man and had not been ill since a child, except an illness in 1892, which continued one week, during which he was a little jaundiced, and for a few hours he vomited blood and passed blood in stools. He gave no history of hemophilia or any sickness except the one above stated.

For a week or ten days of the prodromal stage he complained of anorexia, malaise, constipation and occasional colicky pains in the upper part of the abdomen, but continued to attend his class. During this period no examination was made, as he did not consult a physician. One morning he complained of nausea, vomited a little and complained of headache, his temperature ranging from 97 subnormal to 102 during the day, slight chilly sensations occurring at times. He then thought he had malaria, and began taking quinin. That night he slept fairly well, and the following day felt about the same as on the previous day, the temperature being very irregular, sometimes showing a subnormal temperature and again a fever of 100 to 102. He was quite nervous at times and would sit up because he felt tired and restless in bed, the nausea and vomiting, one or both, occuring every few hours, no blood appearing at this time. He consulted a physician, who examined him quite carefully and concluded that the trouble was malarial and treated it accordingly with calomel and quinin.

For three days following the patient seemed to improve, remained in his room, but said he felt better, the temperature remaining more nearly normal and the nausea and vomiting subsiding to a great extent. Then he began to get worse, the nausea and vomiting increased and within a day he began to vomit blood, also to pass blood with the stools. At this time jaundice was quite distinct, but had existed in a slight degree before. The patient could retain nothing in his stomach and sometimes he vomited a half a pint to a pint of blood, at

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times bright red and again it had a reddish-brown grumous appearance, depending upon the quantity and duration of time in the stomach. It seemed as if blood was constantly accumulating in the stomach. When the vomiting became so severe, he could retain very little liquid and no nourishment and became rapidly prostrated; sometimes he would vomit without any feeling of nausea. The urine a short time before death was scanty, high colored, specific gravity 1030, contained bile pigments, albumen 4 per cent, urea .003, tube casts and tyrosin and leucin. Examination of the blood showed greatly diminished number of red cells, increased leucocytes, no evidence of malaria and quite numerous fat globules.

At times he was slightly delirious, but until the final coma, a few hours before death, he would at any time answer questions rationally, and required no restraint to keep him in bed.

He slept only at intervals, some twitchings of the voluntary muscles were observed and he complained of considerable headache during the last three days after the onset of the severe symptoms.

His condition at the time I first saw him, about two hours before death, was as follows: Jaundice marked, cyanotic; blood taken on covers for examination very dark. He could be aroused to consciousness, but coma was rapidly deepening. Pupils normal in reaction, equal, regular, moderately dilated; tongue brown, dry coat; extremities cold; temperature 103; pulse 130, small, regular; respiration 30. Examination of lungs showed a few moist râles posteriorly and at base, otherwise normal. No cough, no expectoration. Examination of abdomen slight tympanites; pressure and percussion over liver caused patient to flinch, showing that it was quite sensitive. The left lobe of the liver could not be detected by percussion below the ribs; the right lobe was much retracted, showing dullness only in the fifth and sixth space in front, extending down to the eighth space at the side. The splenic area slightly enlarged.

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From the above symptoms, especially the extreme atrophy of the liver and history of case, I made the diagnosis of acute yellow atrophy of liver. I remained with the patient until he died, which occurred by gradual failure of respiration. For twenty minutes after death a peculiar phenomenon was observed. There was an almost constant fibrillary twiching of the muscles of the extremities and body.

An autopsy made 36 hours after death, body having been embalmed with formalin solution, showed the following condition: —

A well developed man, rather slender, fair muscular development, moderate amount of subcutaneous fat.

The skin showed no evidence of eruption; jaundice of about equal intensity was very pronounced over the whole area of the body. Some hypostasis of blood in back and pendulant portion of body. Post-mortem rigidity was very marked through the entire body. The thorax was first opened, pleura showed ecchymotic spots; heart was then exposed and some excess of fluid in pericardium, also areas of sub-pericardial ecchymosis. Right heart normal in size, flabby in consistency, myocardium pale and mottled, ecchymotic spots on both the endocardial and cut surfaces, valves normal. Left heart same as right, the subendocardial ecchymosis marked. Aortic orifice narrow, valves normal, mitral orifice wide, slight thickening of valves.

Spleen easily removed, 12½ by 6 by 4 cm., slightly enlarged, especially thickened, soft and friable; cut surface showed faint trabecular markings of follicles, pulp prominent on cut surface. Liver easily removed; capsule of the left and lower right lobe much shriveled; right lobe 15 cm. wide, left lobe 6 cm. wide, length of right lobe 16 cm.; length of left lobe 10 cm.; greatest thickness of right lobe, 5 cm.; greatest thickness of left lobe, 3 cm.; consistency very soft and friable, especially the left lobe and lower border of right; great thinning of the lower margin of left and a portion of right lobe; saffron yellow markings of left lobe and lower

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part of right lobe, giving a mottled appearance; in upper half of right lobe dark red area of diffuse hemorrhage as large as a hand; region of gall bladder atrophied considerably and bladder of lead gray color. Cut surface of liver showed saffron yellow, especially in left lobe and lower right, in which region the pulp showed no cortical markings, but they were faintly seen in upper right lobe.

Hepatic veins were collapsed in left and lower right lobes, but open in upper portion of right. In places the pulp was so soft as to run when cut through with knife. Kidneys were easily removed; each measured about same, 12 by 6 by 4 cm., congested, markings distinct; tunica propria easily removed, surface of each smooth, pale, mottled; cut surface of pyramids very red; cortex saffron yellow; tubes showed fatty degeneration, both very friable. Small intestines were injected empty, and small ecchymotic spots were present throughout the visceral peritoneum. Colon and duodenum showed the same condition, contents acid, thick, yellowish material. Stomach contained a small amount of dark-brown grumous substance. There was an extensive ecchymotic area involving most of the anterior wall, cardiac and greater curvature, in which region vessels were dilated and much of the mucous membrane had sloughed. Omentum and mesentery were rich in fat and showed a few ecchymotic spots. Parietal peritoneum was smooth and free from exudate; scattered ecchymotic spots. The pancreas was normal in appearance and consistency. No further examination was made at autopsy.

A microscopic examination was made of portions of liver, kidneys, heart and pancreas. Pieces taken from softest portion of liver showed all of the liver cells well advanced in fatty degeneration; pieces from the upper right lobe showed some areas in which the process was only beginning, but no portion was free from granular and fatty degeneration.

The sections of kidney showed very much the same change as the liver, the granular and fatty degeneration being most

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advanced in the cortical area, diminishing toward the pelvis. Numerous casts were found in tubes. The sections of heart showed the muscle fibers atrophied and also some fatty degeneration present. The pancreas was normal, there being no evidence of degeneration.

The result of the autopsy and pathologic examination proved beyond a doubt the disease to have been acute yellow atrophy of the liver, and with the history as above given, I think we are justified in considering it of the idiopathic form. Again, I would call attention to the fact that I believe this disease more often occurs unrecognized than we think. The treatment as given in the literature of the subject is chiefly symptomatic and very unsatisfactory in point of cure, as only a few cases recover. I believe that a more careful examination of the clinical features and of the urine might give us an earlier diagnosis in more of these cases, and we might then arrive at a more successful empirical if not rational line of treatment. In the history of this case we find evidence of a similar attack seven years ago, from which the patient recovered. The nature of this attack was obscure, and the physician in attendance said he could not account for the jaundice and the blood in vomited matter and stools. In the light of the subsequent fatal attack, I believe we are justified in considering the first one of probably a similar nature. I appreciate the history of the case is not as complete as desirable, but from the available facts I was not able to determine any definite etiologic factor. More than one-half of the cases reported occur in females, and more than one-third of these during pregnancy.

It is quite certain that none of the metallic poisons (*e. g.* phosphorus), which sometimes cause similar conditions, had any relation in this case.

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VENESECTION IN PNEUMONIA FOLLOWED BY INJECTION OF NORMAL SALT SOLUTION.

By William Porter, St. Louis.

The suggestion that I have to offer is founded upon something more than a mere hypothesis. The physician of twenty or thirty years ago bled in cases of threatened cardiac failure in pneumonia and the good results led him to bleed again. Within the last year or two, the modern physician has injected the normal salt solution in cases of lobar pneumonia with advantage. It is a fair proposition that these two procedures can be combined and while by venesection we attempt to relieve the tendency to right-sided heart failure and remove a certain amount of toxin-laden blood, we at the same time, by means of the salt solution, increase the pulmonary circulation, accomplish dilution of the toxins that remain and increase the oxygen-carrying capacity of the blood.

I shall here use the term, pneumonia, as having reference to the lobar or so-called croupous inflammation, distinct in cause, progression and manner of resolution, from the broncho-pneumonia or lobular form. May I remind you of the classical distinction of the schools, that the former is an acute, general disease with local manifestations in the lung and the latter is a local disease with general manifestations? In the typical or lobar form, the attack is accented upon the heart and the nervous system. The organic lesion in the lung may be extensive and respiration and circulation be fair, while on the other hand the heart may fail where there is but little lung invasion.

The character of the blood in pneumonia and the condition of the blood-supplying organs is a large field for study. Upon

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deductions from such investigations, the most rational and direct methods of medication may be based. The impression upon the nervous system in pneumonia is also an important factor. I believe that instead of three stages as we find enumerated in the books, that we have four and that the first stage is that of vaso-motor paresis, dependent upon toxin poisoning, of which the main symptom is the feeling of general malaise, and the climax is the chill that inaugurates the so-called first stage of the books.

Certain is it that vaso-motor inability is a prominent and anxious complication as far as, and at times beyond, the crisis in the last stage. This adds to the necessity for investigation along the lines that I have mentioned. If the toxin-poisoned blood with its excess of fibrin can be brought nearer to the norm, we should expect that the nerve force which this blood supplies will be stronger and that favorable resolution will be hastened.

What is the condition of the blood in pneumonia? Granted that there is a pneumococcus infection — and we do not have to argue this in this Association — we quickly have a toxemia due, as shown by Wells (*Journal Am. Med. Assn.*, Aug., 1899) to the development of pneumococcal toxins and possibly antitoxins. This writer also says that the blood may contain pneumococci as well as toxins. At first, following the infection, the specific gravity of the blood is increased and also the number of white blood corpuscles. Whether this leucocytosis is protective or not is an undetermined, interesting question. We find with it an increased amount of hemoglobin and fibrin. The proportion of the latter in the blood is sometimes five times as much as in the normal. In this condition of the blood, with depressed cardiac force, the tendency is often to the formation of heart-clot, which occurs in about one case in twenty, and is doubtless, in many instances, believed to be heart failure.

Time will not permit me to speak of the destructive changes in the blood elements, but there are two additional

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phenomena that have a decided bearing on our subject. One is the great diminution of the chlorides and the other lessened capacity of blood aëration.

Absence of the chlorides from the urine in pneumonia cases has been noted by many diagnosticians. A typical report was made by H. Hutchinson of London (*Centralblatt fur Medicin*, No. 49, 1899), who found a greatly increased quantity of chlorides in the urine of a number of pneumonia cases and there was no vicarious excretion through the skin, intestines or sputum. The blood was also poor in chlorides. It is true that other acute diseases are characterized by the retention of chlorides, but not to so marked a degree as pneumonia. The tissues contain a little more than the norm, but it is not stored up in any special organ.

The blood changes affect the nervous system and with the increase of the pneumococcus toxins, there is the initial chill, the subsequent fever and the vaso-motor depression. The lowering of arterial tension in the early stages is due, according to the most recent investigations, to the inhibitory action of the toxin upon the nerve fibers of the capillary walls and blood vessels, and not to direct heart failure which may occur later, from a blood-clot or loss of nerve supply to the cardiac muscle. With blood so changed and the mechanism of the circulatory organs so impaired, the capacity for aëration is greatly diminished. May not this explain why, in many cases where there is a comparatively small amount of pulmonary lesion, there is the rapid respiration, the quick pulse, the high fever and general depression of an exceedingly acute and grave disease?

Upon this premise we have a better understanding of the record of results following venesection in former days and a good cause for its reintroduction to the practice of to-day. Upon this theory, it is not so much the relief of the heart that is needed, or a lessening of the pressure in the inflamed lung, as it is a withdrawal of as much of the toxin poisin as

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is possible, a lessening of the amount of fibrin and a restoration of the air-carrying and nutritive capacity of the blood.

I regret that the clinical experiments that I have undertaken at the City Hospital through the assistance of Dr. Amyx are not far enough advanced to make me willing to quote them. A careful record of all the attending phenomena is kept and the promise is good but we all recognize that in estimating results in any new method, conservatism is demanded. In private practice so far I have limited the use of the salt solution to enemata but will use it whenever indicated hereafter.

This method is justifiable, first because venesection is, in itself, a step in the direction of relief of poison infiltrated and overcrowded blood-vessels, and because the injection of the normal salt solution is an effort to restore the blood to its normal condition. A reference to the records of the past and study of the results of more recent investigations of hemic changes in pneumonia will sustain the first proposition. I believe that venesection alone is a remedy that is too often neglected, especially in sthenic cases.

The second step in the procedure, especially when it is made the second and not advanced alone, is also reasonable. Penrose (Johns Hopkins Hospital Bulletin, July, 1899), records that by the infusion of the salt solution, in several cases, the toxins were diluted, delirium relieved, and elimination through the sweat-glands and kidneys promoted. The temperature was lowered and the heart stimulated. Penrose did not precede the saline infusion by venesection but advocates the latter should the circulation seem disturbed by the additional volume of liquid. I believe that venesection should be done first for the reason already given and also that it is a most important and reasonable preparation for the injection.

Lenhartz (*Annals de Medicine et Chirurgie*, Sept., 1899), found that the immediate result of intravenous saline injections in acute diseases in children was to lower the blood pres-

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sure and increase the force of heart. The consequent lavage of the whole system aided diucesis and diminishes the toxins. The number of the blood corpuscles and the hemoglobin and blood pressure did not show much increase, but the excretion of sodium chloride became rapid and the high specific gravity of the urine showed that a large quantity of waste was being eliminated.

The saline injections are shown by Reid Hunt of the Johns Hopkins University, to increase the amplitude of the respiratory undulations of the blood pressure, and Penrose believes that this indicates that the salt solution increases the circulation in the lungs and their ability to take up more oxygen. He also believes that the patient is more susceptible to the influence of oxygen inhalations.

In the experiments at the City Hospital, venesection is ordered as soon as the diagnosis is well established, i. e., within four days at farthest from the initial chill, and generally earlier. The amount of blood to be removed is not necessarily large. More can be taken if necessary and until this method of treatment is better established, it should not be pushed to extremes. From eight to twelve ounces will generally give relief in the average case as we meet them in the class of patients that come to the Hospital. At once, the subcutaneous injection of the salt solution is ordered, giving this the preference over the intra-venous injection because it is slower and the effects more gradual. In an urgent case, I should not hesitate at transfusion.

I hope that further investigation may justify this method as an addition to our treatment in pneumonia. I use the word, addition, advisedly, for it should be by no means a substitute. The very pathological conditions outlined, demand the greatest care in the ordinary methods of promoting elimination by the skin, bowels and kidneys, and, above all, of heart support. The value of oxygen in cases of greatly impaired aëration is not sufficiently understood. It

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seems to be especially useful after the injections of the salt solution.

Heart tonics should be chosen according to the indications. It is not so much a question of a heart tonic in an urgent case as what kind of a tonic. Strychnin is nearly always indicated and digitalis if there is vascular relaxation and an easily compressible pulse. The well known effect of nitroglycerin on the muscular coats of the arteries, and, as some think, upon the vaso-motor system, should limit its use in pneumonia to the few cases of high pulse tension with cardiac failure. On no account should heart depressants be used, even in the first stage, to lower arterial tension which is undoubtedly due to toxin poison. Diminish the toxins and guard the heart.

I have had no satisfactory experience with the anti-pneumococcus serum. It is yet a question that is to be solved. The general treatment of pneumonia, however, is too large a question to be discussed in a paper intended to call attention to a single proposition.

DISCUSSION.

DR. J. S. MYER, St. Louis: In the first place I have an objection to the title of Dr. Crandall's paper. I do not believe that in a condition in which there is such a material pathologic change, we are justified in calling it an idiopathic disease. That term is nothing more than a certification of the fact that we do not know what is the cause of the disease. But in acute yellow atrophy of the liver, although we do not know the exact cause, I think the use of the word "idiopathic" is not justified because it is undoubtedly always secondary. One of the most recent articles that I have seen on this subject is the report of three cases by Profs. Senator, Huber and Raner, in which they observed syphilis as an etiologic factor. In each case, about three weeks previous to the attack of acute yellow atrophy, fresh syphilis existed — the primary lesions of syphilis. So far as I know, tertiary syphilis has never been given as the probable cause, or spoken of as the probable cause, — as the etiologic factor; but acute yellow atrophy following so closely upon these three cases in which the primary or secondary lesions of syphilis existed, goes to show, I believe, that syphilis

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may be considered as an etiologic factor. I had occasion, not very long ago, to observe a case of acute yellow atrophy in the clinic of Prof. Senator at the University of Berlin. The case was a woman about 30 years of age, who was pregnant at about the third month, and when she came in (at night) about the only symptom that presented was vomiting. We did not see the discoloration of the skin and made a diagnosis of vomiting of pregnancy. On the following morning it was noticed that the patient was presenting symptoms of icterus. We thought the patient had simple catarrhal icterus, associated with the vomiting of pregnancy. However, the professor in making his rounds of the wards, gave careful attention to the case, and yet did not make a diagnosis at that moment, but he said to look out for yellow atrophy in this case. About two days later the dullness of the liver had disappeared entirely and the woman was comatose and had bile pigments in the urine, which is very characteristic. The professor, on leaving the hospital, requested me to attend the post-mortem the next morning and preserve the organs for him. The following morning, however, the patient was better, and from that day improved.

They were using spermine prepared by Professor Poehl at St. Petersburg, in Russia, and which is recommended in the treatment of these cases, and they had been using it. But until the morning I speak of there had been no apparent change in the case, and so far as I know she made a recovery. Another factor that Dr. Crandall mentioned is the subject of phosphorus poison, which is admitted to be a very important etiologic factor in these conditions. However, in recent years the number of cases induced by phosphorus poisoning has been very much reduced as a result of the fact that we are not now using phosphorus matches. Another very interesting fact in connection with that is that in a large per cent of the cases that presented themselves to the Charite Institute of Prof. Virchow, these cases almost invariably were in women and in cases of pregnancy. It was thought that of course the pregnancy was the chief etiologic factor, though it was not known what relation existed between the pregnancy and the atrophy. It was found, however, in one case of a pregnant woman, that she had partaken of phosphorus with suicidal intent, and acute yellow atrophy followed, and the government shortly afterwards prevented the manufacture of these phosphorus matches. So that it is probable that pregnancy plays less of a role than was at one time supposed.

In connection with Dr. Porter's paper this absence of the chlorides in the urine has interested me for the past two or three years, and I must say that, although I have looked up the literature carefully, I have not found any real explanation as to why the chlorides are absent from the urine. It has simply been demonstrated that a large percentage of the chlorides are absent from the urine. Why this is the case is not definitely known. However, we do know that in cases in which there is an increase of CO_2 in the blood there is also a tendency to the reduction of the chloride in the urine.

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There may be some connection between the increased carbon dioxide of the blood and the decrease of sodium chloride as the result of the production of the sodium chloride and the chemical action taking place by the combination of the carbon dioxide and the sodium chloride.

In connection with the work of Penrose of the University of Pennsylvania it is interesting to note that Penrose in connection with the injection or transfusion of the salt solution invariably used oxygen inhalations. He did this because at first he used oxygen inhalation and found that this did not give a good result because of the disturbed condition of the circulatory system, and as Dr. Porter said the transfusion of the sodium chloride solution proved to be the missing link.

DR. CRANDALL: I have had considerable experience in the use of the saline injection for various purposes, especially for acute poisoning of various kinds and in some cases I have had occasion to bleed and then inject the saline solution. Also in cases of injuries of various kinds and after hemorrhage in surgical operations and typhoid hemorrhage, and various cases of loss of blood; also in cases of extreme prostration from febrile conditions in different diseases. It occurs to me that recently I saw an account from a Philadelphia hospital where saline injections were used extensively for anemia ten years ago in one of the Philadelphia hospitals. They used the saline solution injections for the same purpose and in the same way as Dr. Porter suggested but without the bleeding. They found that cases of alcoholics, in which pneumonia is very fatal, were improved by using the saline solution. These cases, it was found, did very much better than where the solution was not used. That was ten years ago and then for a number of years it was used only intermittently or not used at all except as an interne would occasionally use it. But lately the saline solution has been extensively used and with satisfactory results.

Now I believe that in those cases it would be well to use the saline solution by transfusion with bleeding. I believe that is quite essential, especially in the cases suggested by Dr. Porter. It may also be used, as suggested, per rectum. I shall expect that the experiments that Dr. Porter is carrying on will be favorable and that this will be one of the remedies we will use in the treatment of pneumonia. I have seen such favorable results from it in so many other conditions, that I am satisfied it will prove valuable in pneumonia.

DR. ROBERT BARCLAY, of St. Louis: We all know that saline solutions are used a good deal more now than ever before, and that a great many physicians are in the habit of using a solution of normal table salt, sodium chloride. I think, however, that better results can be obtained if a solution is used which represents the blood as nearly as possible. I have here a formula for a concentrated saline solution, two drams of which to a pint, one dram to half a pint, or one drop to a dram, will give a normal saline solution almost identical with the blood. It may be used not only with water, but it may be used with hydrogen peroxide. This formula consists of

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24 grains of sodium chloride,
72 grains of chlorate of potash,
60 grains of sulphate of soda,
60 grains of carbonate of soda,
48 grains of sodium phosphate,
6 ounces of distilled water.

The physician can take this with him in a bottle wherever he goes and if he needs a normal saline solution just like the blood or a normal saline peroxide solution he adds water to it. One reason why satisfactory result does not follow the use of hydrogen peroxide in the abdominal cavity is on account of the irritating effect of chemically pure water. If the physician uses a drachm to half a pint of water or ordinary peroxide solution he will have an inert substance left behind.

DR. THATCHER: The importance of the paper read by Dr. Porter, I think, is paramount to most anything else to the general practitioner. The saline solution is being used in a great many ways, in a great many forms, but to the general practitioner in pneumonia I think it is equal, if not superior, to digitalis, or strichnin or nitroglycerin. Where the chlorides are diminished we add the chloride in the solution to the blood and re-establish the equilibrium to a certain extent, at least, and I am in favor of intravenous injection in preference to the subcutaneous application for the reason that it goes directly through the venous circulation to the heart and into the lung itself.

DR. R. B. H. GRADWOHL, St. Louis: I would like to say something about the toxins of the pneumococcus. The procedure mentioned in Dr. Porter's paper is very rational theoretically. Patients with pneumonia suffer in the presence of the specific organism in the local part of the body, accompanied with a general toxemia due to the micro-organism. In very few instances are the pneumococci floating free in the blood. I think in only one or two cases has this been demonstrated. In the first place bleeding will remove a large part of this toxin-laden blood, and then the injection of the salt solution will go towards preventing any untoward effect of the toxine that is elaborated later. And in this connection I would say that some very good results are now being obtained with the anti-pneumococsin in this disease. Three cases were reported in the *Maryland Medical Journal* last month where it cut short the disease in two days after the injection of a liberal amount of the anti-pneumococcus serum.

DR. C. G. CRANDALL, St. Louis: In regard to the title of my paper, Idiopathic Yellow Atrophy, I quite agree with Dr. Myer. I used the word idiopathic for the reason that we do not know the cause of acute yellow atrophy except in those cases of phosphorus poison and perhaps a few other poisons. As the doctor says in these cases we do not know the cause of acute yellow atrophy. I think it is a secondary condition, but the primary cause we do not recognize, I speak of it as idiopathic and so it is frequently referred to in the literature. I reported the case on ac-

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count of its comparative rarity. Prof. Osler says they are rare; that he has not seen a case in his hospital; however, he says they may occur. In one instance at a hospital in Berlin there were five cases reported in three months, but it is not stated whether they were the result of phosphorus poison or cases in which the cause was not known. As regards syphilis, I will say that in this particular case I made a careful investigation to determine if there was inherited syphilis in the individual but I failed to obtain any positive information. I looked into the case carefully from an historical standpoint, wrote to several friends and physicians with whom he associated and the physician who treated him for the first attack of the trouble of the same nature from which he recovered, and could learn nothing that assisted me in determining the cause of the trouble.

DR. W. PORTER, St. Louis: My purpose was simply to present the subject for your consideration and I hope that by the end of another year I may have more definite clinical reports to make.

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WHAT NOT TO DO IN EAR, NOSE AND THROAT WORK.

M. A. GOLDSTEIN, ST. LOUIS, MO.

Medical literature is so replete with accounts and descriptions of successful therapy and operative technique in every field that it may be well from time to time to take a retrospective view and recount some of the causes of failure in the treatment of certain classes of cases. We are always ready to publish our successes but less ambitious in presenting our failures.

In these critical remarks I shall confine myself entirely to ear, nose and throat work and observations gleaned from daily practice.

There are several reasons why errors in diagnosis and treatment are frequently made in otology and laryngology. In the first place we deal here with cavities which require reflected light for their proper inspection and examination. It is customary with many general practitioners, either because they do not possess a head mirror or because they do not desire to be troubled with its manipulation, that a throat, ear or nasal cavity is inspected by direct light and medications and sometimes operative measures undertaken under these conditions. If we are to deal, for example, with a case of peritonsillar abscess and the application of the bistoury is required for an incision to drain this area of accumulated pus, it is rather a risky maneuver to attempt this operation, small and simple though it may be, without the aid of reflected light.

Another condition which offers many impediments to the proper manipulation of instruments in the ear canal, nasal passages and larynx is the narrow caliber, irregular shape and

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tortuous passage-ways of this area. When a general surgeon does a laparotomy he has unlimited freedom of movement, an open field, a large cavity, direct light and nothing to hamper the use of his instruments. On the other hand when the aural surgeon manipulates his instruments in the external auditory canal he is confronted by a small cavity of scarcely the cross diameter of a lead pencil and to whose depth he can see only with the assistance of clear well-reflected light. There is scarcely room for the manipulation of instruments in such a small canal and this together with the narrow limits of this operative field necessitates increased carefulness and delicacy of technique.

This brings me to one of the first observations of this paper,—the removal of foreign bodies from the ear. I can best illustrate the several suggestions which I desire to emphasize by citing a case from my own practice. Some months ago Dr. S. of a neighboring Illinois town called at my office with two little patients, a sister and brother, aet. respectively six and four years.

In playing about their home the children came into possession of some shelled pop-corn and in the course of their play each child succeeded in lodging a grain of pop-corn in the other's ear. The mother first attempted to remove the foreign body by the application of a hair-pin. The only practical effect of this manipulation was to force the corn further down toward the fundus of the external auditory canal. The children were then taken to a physician who attempted the removal of the grains of corn first with a forceps which were scarcely adapted to work in this area and then attempting to force the foreign bodies out of the canal by syringing the ear with water. These two manipulations had the following effect: Children are naturally restless patients and this is particularly experienced in work about the special organs of the head. The children were forcibly held in the arms of an assistant. This, however, usually proves ineffective and any movement on the part of the little patient during the applica-

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tion of instruments in the ear is apt to cause serious damage, especially if the movement is in the direction of the operator and instrument. In the case at issue the physician simply succeeded by the restlessness of the child in thoroughly lacerating the external auditory canal and pushing the foreign body in the one case clear to the fundus of the canal, and in the other case perforating the drum-membrane and pushing the grain of corn partially into the middle-ear cavity.

Added to this was the absolutely erroneous use of the syringe. We all remember in our undergraduate days when we desired an easy disarticulation of the skull in the dissecting room, it was simply necessary to fill the skull through the foramen magnum with dry beans, emerge it in a bucket of water over night and by morning the swelling of the beans due to infiltration by the water, produced sufficient pressure to thoroughly disarticulate the skull.

This on a small scale is exactly what happens when aqueous fluids come in contact with dry cereals which may be lodged as foreign bodies in the auditory canal. As a rule the foreign body is large enough to snugly fit in the external auditory canal. With the addition of water this cereal mass swells and undue pressure is exerted on the walls of the canal, pain is intense, swelling and constriction of sections of the canal take place and this lodgment of a comparatively inert foreign mass may in this manner become quite a serious matter.

In the cases which I have just described the children were taken to Dr. S. of the same town and as he had not the necessary instruments for the manipulation of these foreign bodies and as the case had really shown possible complications of deep-seated ear trouble, he brought the children to my office.

The little patients were both in a state of great nervousness, suffering excruciating pain, and an inspection of the ears revealed a swollen, reddened auditory canal with the grains of corn scarcely visible owing to the infiltration of the muchly diminished caliber of the auditory canal.

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Without further attempt at manipulation about the ear, the patient was placed under chloroform anaesthesia. A tampon of a 10 per cent solution of cocain in chloroform was applied to the external auditory canal for the purpose of reducing the engorged tissues, and after some difficulty the foreign bodies were extracted.

The principles involved in this form of cases are first, complete fixation of the head to prevent any interference on the part of the patient with mechanical manipulation about the ear. Second, the selection of instruments properly adapted for ear work. Third, the necessity of using bright reflected light in the inspection of the auditory canal and in guiding the instruments. Fourth, the absolute contraindication of the syringe and aqueous fluid in the removal of foreign bodies which are of a cereal character.

It may not be inopportune to here also state my objections to the use of the syringe in cleansing the ear of pus or mucous discharges. I claim that the ear can be just as thoroughly cleansed by the so-called "dry treatment" consisting of mopping out the ear gently by a cotton-tipped probe and then insufflating one of the several forms of dry antiseptic powders into the canal. By the free use of the syringe in middle-ear suppuration, especially where large perforations of the drum-membrane exist, we run the risk of forcing some of the fluid from the syringe directly into the middle-ear cavity and carrying it upwards into the attic area, producing new foci of infection; indeed several instances are on record where the development of mastoid inflammation was traced directly to the indiscriminnte use of the syringe in cleansing the middle-ear cavity of pus. Another objectionable feature to the use of the syringe in the treatment of middle-ear suppuration is that by the introduction of additional fluid it adds to the irritability and bogginess of the already inflamed mucous membrane, one of the very conditions which it is our purpose in the therapy of this area to subdue.

Another practice which is almost universally indulged in

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by the general profession and which is productive of but little relief from pain is the instillation into the ear of sweet oil and other heavy oils combined with laudanum and other anodynes for the relief of ear-ache. Why these heavy, sticky oils should be selected as a menstruum for such anodynes is an explanation which has never been satisfactorily made. One thing, however, is certain in the use of these oils for ear drops, and that is that they leave the fundus of the auditory canal and the epithelial surface of the drum coated with a sticky, greasy layer. It might also be added that the therapeutic effect of morphine, belladonna, and other anodynes incorporated with these oils is very limited, as the drum-membrane has a poor absorbing surface and but little of the medicated fluid penetrates. A more satisfactory result may be obtained by the use of these same anodynes in solution in hot water which is somewhat more efficient than oil, and distinctly more cleanly.

The one pathological condition wherein the free use of the syringe is always justifiable is for the removal of inspissated or impacted cerumen. Here by gently syringing with a warm alkaline solution the ear may usually be easily cleared of this mass. There is often a temptation when inspecting an ear plugged up by impacted cerumen to apply a small blunt curette or hook to take out the mass. Where the cerumen is firmly lodged in the canal and where possibly its sticky consistency has brought it into contact with the external layer of the drum-membrane this picking-out process may be accompanied by considerable risk as in the removal of these particles the drum-membrane may be torn or the walls of the auditory canal scratched and lacerated.

The Misuse of the Air Douche. — An apparatus which is very effective when applied in proper cases, but which can produce painful and sometimes serious conditions when misused, is the air douche, and the technique originally described by Politzer. Where we are dealing with chronic catarrhal lesions of the middle-ear cavity the air douche is frequently

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brought into service to inflate the drum-membrane and restore the partially absorbed air contents of the tympanum. Even in acute middle-ear affections where hyperemic and congested conditions of the naso-pharynx causes a narrowing of the caliber of the Eustachian tube, a diminution of air supply to the middle-ear cavity, and the resulting concavity of the drum-membrane the air douche is a very efficient and effective means of restoring the parts to their natural condition and of relieving the pain accompanying these acute ear affections. There is one condition, however, in which the use of the air douche is absolutely contra-indicated, and a condition which I have observed to be frequently abused. In acute coryza (cold in the head) where there is a stuffy feeling in the ears, profuse discharge of mucus from the nose and naso-pharynx, the use of the air douche and Politzeration to clear the ears can produce only an aggravation of the trouble. Never use the air douche or Politzeration in the early stages of acute otitis media or in acute coryza.

Another practice which has in recent years come in for a large share of unfavorable criticism is the use of the nasal douche or nasal irrigator. The old-fashioned way of manipulating the nasal douche was to place the medicated solution in a container elevated from three to six feet above the head of the patient, insert the nasal tip at the distal end of the rubber tubing into the anterior nares, instruct the patient to bend the head well forward, to open the mouth and to allow the fluid to flow continuously through the nose. The position of the patient and the open mouth causes the fluid to enter the nostril, fill the entire nasal cavity on that side, finding its way into the posterior nares, and as its exit to the pharynx is cut off by the elevated soft palate, its only possible outlet is through the other nares. Where the pressure of this column of fluid is sufficiently high, it invariably causes discomfort in the naso-pharynx and frequently some of it finds its way up into the Eustachean tubes. Clinicians have pointed out time and again the many ear complications resulting from the use

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of the nasal douche and to-day I believe that it is not too radical a statement to claim that the nasal douche should be excluded from modern practice and should be assigned to a comfortable corner in the museum of antiquated medicine.

A practical observation which it may be well to record is the fact that the most of the sprays which we use in medicating the mucous membrane of the nose and throat require too much air pressure for their manipulation. A spray which requires from 7 to 10 pounds of air pressure to the square inch for its manipulation is sufficient to cause quite a congestion of the mucous membrane of this area even with the blandest solution and when properly applied. This accounts for much of the irritation that is temporarily produced in the treatment of the nasal passages and larynx and gives rise to the justifiable claim of the patient that his nose or throat is worse than before he began treatment. All this can be avoided by the selection of an atomizer which will throw a spray with the application of but three to four pounds of air pressure to the square inch.

There is so much indiscriminate use of concentrated and irritating medications in the nasal passages that it may be well to give this also a passing thought. The remedies that have been suggested for the relief and cure of hay-fever are so numerous that their enumeration would require many chapters. Whatever the etiology concerned in the production of hay-fever may be, we do know that clinically speaking there is always an irritating factor present; this may be a peculiar diathesis, the presence of special pollen or dust at certain seasons of the year, mechanical obstructions or new growths in the nasal areas or a highly sensitive and irritable mucous membrane in a neurotic patient. Whatever the cause may be to produce this periodic, peculiar series of catarrhal phenomena, I have always found that the application, either by spray or swab, of strong aqueous or oily solutions which have irritating or highly astringent properties, invariably aggravate the symptoms. Anything that will tend to stimu-

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late or irritate mucous membrane under such conditions should be avoided. I cite hay-fever as a practical example of the misuse of many medications in the nasal passage.

I cannot leave this chapter without entering a strong protest against the misuse of cocain in the nose and throat. As it appeals to me the therapeutic value of cocain in the nose and throat is limited to, first, its application by tampon (not by spray) to assist in diagnosis. Here its value is inestimable. By its peculiar therapeutic reactions of temporarily reducing the engorged tissues of the turbinals and mucous membrane, it aids us materially in establishing our diagnosis. Second, for the relief of acute inflammations and acute pain in the nose and throat it is an effective and justifiable therapeutic agent, especially in combination with menthol, camphor, eucalyptus, etc.

In a large class of chronic affections of the nose and throat, where cocain is used either for temporary relief, or, as I am sorry to say is very often the case, to hoodwink the patient with the idea that he is receiving effective treatment, its use should be distinctly stamped as malpractice. Under no circumstances do I consider the application of cocain by spray as good therapy because the solution of the drug is thereby diffused over a large area of the mucous membrane, is much more rapidly absorbed and cannot be kept under control of the physician as well as when applied on pledgets of cotton directly to the circumscribed spot which we desire to medicate.

In these rambling suggestions and criticisms I have not attempted to offer anything new but rather to emphasize some of the possible causes of failure in professional work and I feel confident that a closer attention to these several erroneous practices will redound to the interest of the profession as well as the patient.

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DISCUSSION.

DR. CLARK, of Kansas City, spoke in thorough agreement with the views of the essayist, stating that there is probably no department of medicine where greater looseness has been practiced than in this. In regard to cocain he coincides in the opinions of the writer. The use of cocain should be restricted entirely to purposes of examination or operation, and possibly in some acute cases, although this should be decidedly limited.

DR. H. W. LOEB: In the matter of the nasal douche I agree with the doctor, and I think the laryngologic world is also in line with the same view; that is the giving up of the nasal douche, especially the old-time douche that was hung up above the head and used with more or less force. It is of some service in nasal atrophic rhinitis where the cakes or crusts are large, and difficult to dislodge. In such case the douche of the hand type, where you pour the fluid into one nostril and bring it out of the other, frequently relieves the patient of the crusts and scabs. Water sprays are also in the main responsible because their use causes the nose to be filled with a watery solution holding crusts in suspension and permitting them perhaps to be blown into the middle ear. I have known of middle ear trouble caused in this way. In regard to cocain of course I agree with the doctor in every particular, except that I must say that I do not prescribe cocain to relieve pain in the nose. I think some good can be accomplished by the use of other agents as, for instance, suprarenals or orthoform in a powdered form, and in the next place I use a solution of antipyrin, a three per cent solution, to relieve the painful symptoms resulting from acute coryza. We can in this way relieve extremely painful conditions and not subject the patient to the possibility of forming the cocain habit, and the distressing after-effects which follow its use.

DR. CRANDALL: I would like to emphasize the point against the use of cocain which the doctor made. I have on at least two occasions noticed that the cocain habit has been formed undoubtedly by the use of cocain in the nose, so that it became a confirmed habit in the patient and I have no doubt that the cocain habit is formed in that way.

DR. PATTON: Dr. Goldstein spoke about lighting the nose, but he did not tell us how to do it. I spent several hours in the office of one of the best nose and throat men in our part of the country, and I noticed he was trying to light the nose without a condenser. To my mind you cannot very well do it. I think the condenser is necessary where you are using the ordinary light. In regard to the douche I do not like to see that condemned altogether in the removal of foreign bodies. Last evening I was called to a little patient who came with a grain of wheat in her ear which she had carried since last August. The wheat was not large enough to become impacted and the douche was the easiest thing in the world to use in the case, and I think very often where the foreign body is small, the douche is the safest and best method we have to remove it.

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DR. GOLDSTEIN: I am very thankful for the sentiments of approval that have been voiced by the gentlemen who have spoken. The paper was prepared especially for the general practitioner and I aimed to take in the salient points of the practice such as we observe in our daily work. Possibly I have not narrated all the conditions and practices which may be considered as erroneous practice in this field, but my time and space were limited.

In the criticism which the doctor has suggested as to the use of the syringe, I suppose he refers to syringing for the removal of foreign bodies. It is not a question of the present cross-diameter of the grain of wheat in its relationship to the external auditory canal; but if you happen to strike a grain of wheat in its long diameter and it is moved so that its long diameter impinges on the walls of the external auditory canal and some of the water is retained in the canal, the chances are that the association of the water with the grain of wheat will very materially increase the size of the wheat and you may have trouble where you least expect it from the smallest grain. It is just to emphasize the danger from the use of the syringe that I take up that point.

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REPORT ON THE PROGRESS OF MEDICINE.

J. D. BRUMMALL, SALISBURY, MO.

In an advancing science there must necessarily be retrograde as well as regenerative processes going on continually. What was built up yesterday on false hypotheses is torn down to-day and reconstructed on new and more lasting foundations. Frequently the most rapid strides taken by science towards the goal of perfection are accomplished through the removal of props that have for years and even centuries supported a useless, weighty, unadorning portion of the edifice.

A paper, therefore, on the Progress of Medicine need not confine itself to progress alone, unless indeed we define progress in a science as the establishment of truth. I mention that at this point, in order to justify the presentation of a few facts in the course of this paper, that some may see fit to term anything but progress.

Though the past year has brought forth nothing of a sensational character in connection with the science of medicine, it has added its quota of substantial facts and figures, such as will be of much use in the future development of medicine. The work of the past year has shown a healthy tendency on the part of the profession at large. Year after year more time and attention are being devoted to the perfection of methods of diagnosis. This tendency, for a long time peculiar to the Germans and French, is now finding a wide field in America. A combination of our skillful technique and practical minds, and more attention to diagnosis, will certainly be productive of much good in the future.

Comparatively little has been accomplished in the past months in connection with pharmacology. Some lament this fact and maintain that a large percentage of the physicians

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of the present day devote so little time to this subject that they enter the practice of medicine, prescribing drugs with whose action they are wholly unacquainted. We are compelled to confess that this is in a great measure true, and agree that this should be discouraged by those moulding the minds of our young doctors. This tendency is to be explained, in all probability, through the commercial turn that this department of medicine has taken. Through the introduction of tablets, fluid extracts, etc., the matter of prescribing with reference to palatability, compatibility, and even the actions of drugs is rendered much easier and is consequently neglected. While there is much to be commended in many of the newer preparations, this matter is undoubtedly being carried to the extreme and should not be too liberally encouraged by the profession.

To attempt to give a list of the new preparations, effective and ineffective, would demand too much of your time and patience. Suffice it to say that a number of very efficacious forms of soluble silver salts have been presented which bid fair to replace the veteran nitrate of silver; among them may be named argonin, protargol, largin, etc. The soluble silver of Crede in its different forms, especially the unguentum Crede, have been largely and widely used in sepsis with many satisfactory results. New morphin derivatives, such as heroin, dionin, etc., possess certain advantages in some cases over morphin, but all are open to its chief objection, viz.: the possibility of establishing habit. New food products have been presented in such rapid succession, that the physician has scarcely time or inclination to try them all. Many of them, however, are efficacious.

Organo-therapy presents still a fertile soil for investigation. The efficacy of thyroid extract in the treatment of myxedema and obesity has been clearly demonstrated. Bone-marrow in the treatment of pernicious anemia has been highly recommended, but is as yet practically untried. Abel has demonstrated in the suprarenal capsule the presence of an

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alkaloid which he calls "epinephrin." Its most marked physiologic action is upon the blood vessels. Through local application or injections it produces a decided increase in the blood pressure, through a contraction of the vessels. Its therapeutic application is now in the experimental stage. We believe, however, that much can be expected from it. An aqueous extract of the gland is being used now as a local hemostatic and depletory, with splendid results. Upon acidifying the precipitate resulting from the addition of an alkali to epinephrin, a dark brown acid is formed, which resembles in many respects the melanins. This is of exceeding interest in connection with the brown pigmentation of Addison's disease. However, as yet no relationship has been traced.

Serum therapy continues to occupy the attention of many investigators, and a number of new antitoxins have been brought forward within the past year. Notwithstanding this fact, the diphtheria antitoxin is the only one that may be unqualifiedly given a position in the materia medica. This has been so clearly demonstrated a specific in diphtheria, that it is no longer being discussed from that standpoint. This explains the dearth of literature on the subject during the past twelve months. Those who are still inclined to be skeptical on this point maintain that the decrease in literature shows waning interest. This, however, is a misinterpretation of an old maxim. Those subjects concerning which we know least in medicine are the ones concerning which most is written. Much is being written both pro and con on the subject of anti-streptococcus serum. It is too early to predict the outcome of the present activity along this line. The results, up to date, are far from convincing to those of us who know the uncertainty of septic conditions in general. Statistics show recovery in but 64 per cent of cases in which it has been used. We believe that the same results in the use of coccal serum can never be hoped for as those attained by the use of bacillary antitoxins, because of the tendency of the

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one to the production of a very short immunity and in some cases an apparent predisposition, while the other produces extended and even permanent immunity. At any rate to obtain results from the use of anti-streptococcal serum it must be prepared from the same species of cocci as are producing the affection in question. Antitetanic serum, too, is passing through that uncertain stage. There has been no unity of results. It seems to have a limited utility, chiefly as an accessory treatment, in well selected cases. The mortality during the past year has not been reduced. Inasmuch as this is the crucial test, we shall be compelled to wait at least another twelve months for convincing results. The tetanus bacillus does not migrate, but remains active in that part to which it was transported. For this reason it was thought that the subcutaneous injections of the antitoxin destroyed only the toxins, and left the focus unaffected. Roux conceived the idea of making intracerebral injections. This method of treatment has since been used by a number of clinicians, with a mortality of 52 per cent. In passing, I simply wish to mention the injections of a two per cent carbolic acid solution, recommended by Bacelli and Ascoli. They claim better results for this method than through the use of the serum. Their claims have not been verified by others.

During the past year the bubonic plague has existed in both sporadic and epidemic forms in Europe, Africa, Asia, and in South America. It has been clearly demonstrated that the plague is spread through rats which are infected by fleas. The destruction of rats and mice has been advocated as a prophylactic measure. Several attempts have been made to produce a specific serum, and it is quite possible that the very near future will crown these efforts with success. They have already met with a degree thereof. Yersin's and Lustig's serum have proven of little or no value in the hands of most of those who have employed them, while Haffkine's serum seems to have given very satisfactory results. The plague is being carefully investigated from every standpoint

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by scientists sent from the leading European universities, and will, we trust, within the near future, succumb to their efforts.

The present status of the tuberculin treatment in tuberculosis has been so thoroughly discussed in the current medical literature, that I would hardly be justified in devoting time to the subject here. Then, too, there have been no very marked developments along this line during the past year. The tuberculin certainly has a limited utility in properly setected cases. The present tendency is to the establishment of sanatoria for the isolation and treatment of consumptives under all of the climatic and hygienic conditions indicated.

Much that is new and interesting has been recently accomplished with reference to malaria. Though this work has been especially on the etiology and cause of malaria, it promises also developments in the treatment and prophylaxis.

The extra-corporeal existence of the malaria parasite has been proven and its mode of entrance into the organism, at any rate in a majority of cases, solved. Although writers on this subject have for years spoken of a probable casual relationship existing between certain insects and the spread of malaria and other fevers, and though in certain of the malarial districts, the natives attribute its cause to the bites of insects, it remained for the last half decade, in fact the last year, to present substantial and convincing proofs. Manson, as early as 1894, expressed very decided views on this subject. They were, however, in a great measure, theoretical, but so plausible that they put to work practical minds. The first real convincing experiments were done by Surgeon-General Ross of the India Medical Service. This was followed shortly by published observations of investigators throughout the world, and especially the malarial districts. Even in countries where malaria is practically unknown, they have, through the transportation of mosquitoes, been able to make searching investigations of the subject. That the mosquito is the middle-man in the production of malaria, there

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can be no doubt. Every link in the chain is now complete. The parasites have been found and observed in the stomach, blood and venemo-salivary glands of certain species of mosquitoes. Birds bitten by these mosquitoes developed and presented the organisms in their blood. Finally, individuals who had never had malaria were subjected to the bites of mosquitoes that were previously fed upon individuals who had malaria, and they at once developed all the symptoms of this affection and presented in the blood the characteristic parasites.

The different species of mosquitoes are being studied and the offenders classified. With the cause of malaria known, which renders prophylactic measures possible, and a true specific with which to combat it, much may be hoped for on this score in the near future.

A large number of cases of so-called "black water fever" or "malarial hemoglobinuria" have been observed in the tropics, and are occasionally met with in the malarial districts of this country. The disease characterized by hemoglobinuria in malarial patients, results frequently in death due to obstruction of the urinary tubules, due to clotting. Koch attributes the most of these cases to quinin intoxication, in persons having certain idiosyncrasies against the drug. While all are not due to quinin alone, it is certainly an etiologic factor in most cases. In passing it might be mentioned that where quinin is contraindicated, methylene-blue is said to have given very satisfactory results.

In conclusion, we cannot commend too highly the attention now being given to the physical methods in treatment and diagnosis. We have at last arrived at the point where drugs are no longer omnipotent in the treatment of all diseases, and hygiene, dietetics, hydrotherapy, massage, etc., are given their proper place in therapeutics. In the diagnosis of diseases of the organs concerned, the esophagoscope and cystoscope are almost indispensable.

The catheterization of the ureters through the aid of the

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cystoscope has given and promises still greater results in the diagnosis of diseases of the kidney.

It was variously predicted at the time of the discovery of the Roentgen rays, that while surgery would be revolutionized thereby, internal medicine could never hope to reap the rewards of this the greatest discovery of the century. This prediction has been proven to be in a measure unjustified. Some things have been recently accomplished for internal medicine through the X rays. It has been maintained by some that the size and position of the heart can be determined with greater precision by aid of the rays than through the usual methods of physical diagnosis. Claims, too, have been made with reference to the early diagnosis of pulmonary tuberculosis. Very interesting reports have been made concerning the diagnosis by this method of pleural exudates, fibrinous pneumonia, thoracic tumors, aneurysms, esophageal diverticuli, and the size and position of the stomach, etc. While these reports cannot but interest the thinking physician, it is doubtful if in many cases a diagnosis can be made by this means that could not be revealed through the physical examination of an experienced diagnostician. Be that as it may, the Roentgen rays have demonstrated an aid in the diagnosis of certain internal diseases and disturbances.

DISCUSSION.

DR. CAMPBELL: One of the strange things connected with the history of the medical profession, according to my idea, is the endless change which has occurred within the last fifty years, the mutations which have occurred in the practice due to the researches and the progress that have been made. There is perhaps no profession in the world in which there are so many learned men engaged in study and investigation as medicine. The most acute minds are at work in it, and necessarily the progress made results in great change. There can be no doubt that the tendency is towards a more complete and more rational system, and one in which science will be more accurate and more exact than it has been.

DR. SHEPPE: I do not think that the statement that malaria results from mosquitoes will bear investigation. I think we have all seen typical

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cases of malaria at a season of the year when there were no mosquitoes alive in the neighborhood.

DR. C. G. CRANDALL, St. Louis: Made a good many examinations of blood in malarial patients. Two years ago we had a great deal of autumnal fever in St. Louis, the kind in which the crescent and ring-shaped bodies were found in the blood, and I find them quite common in the Mississippi Valley; it is a very common form of malarial fever, and accounts for the protracted fevers which resemble typhoid fever and which are occasionally mistaken for it. I think several species of mosquito may convey the malarial poison; whether it is conveyed entirely by the mosquito is still in doubt, but I personally have my doubts about its being conveyed entirely by the mosquito. But in regard to the matter of developing malarial fever at a season of the year when no mosquitoes exist, it is well known that the malarial poison can exist in the blood, a few organisms being present, and weeks and months afterwards they may develop and produce paroxysms which may occur at a time when the organism cannot come in contact with mosquitoes. As the paper was being read it occurred to me that in Texas they have a fever which resembles malaria and the organism of which is carried by a tick. This fever attacks cattle, and they get it in the fields from the ticks. This is only another indication that malaria may be carried by an insect.

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TWO CASES OF CHANCRE OF THE GROIN.

By A. H. Ohmann-Dumesnil, of St. Louis.

Philippe Ricord, whose name is one of if not the most illustrious in the annals of syphilology, pronounced the dictum: "In every case of syphilis look for the chancre." He further stated that no case of syphilis could exist without a chancre, and that if the search was prosecuted with sufficient patience and pains the chancre would be found, if not upon the genitals, somewhere else. It was his insistence upon this point which led to the finding of so many extra-genital chancres since that memorable epoch to this day. It was this and other teachings of his which awakened the medical profession to a realization of the necessity not only of being more careful in examinations of suspected syphilitics, but of confirming the fact, if such it was, that the disease really existed in a patient. It was this persistent search for the initial lesion which led Ricord to discover the urethral chancre and thus overturn Bell's contention that gonorrhea could be the origin of syphilis.

The fact of never having lost sight of the injunction of the celebrated syphilographer led me to always search for the primary helkosis and for this reason, in all probability, I have had an opportunity of seeing quite a considerable number of extra-genital chancres. The two cases which I propose to describe were seen within a comparatively short time of one another and possess each one a certain amount of interest apart from the locality implicated. These various points as well as the frequency with which the chancre in this locality is observed will form the basis of a few observations upon the completion of the recital of the two cases to which allusion has been made. In view of the fact that the cases are but two in number it would be superfluous to attempt any-

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thing in the way of statistics; but, they may prove of sufficient interest to incorporate with those already published. The cases are as follows: —

Case 1. Chas. A., single, 25 years of age, is a well-developed man of medium height and fairly well-muscled. He is a laborer by occupation and of temperate habits, using tobacco and intoxicants in moderation. He states that his parents are living and healthy. He is ignorant of what his grandparents died. His brothers are living and in good health. He has always enjoyed good health. He has had some of the diseases incident to childhood. He remembers being told that he had measles, whooping cough and scarlatina. But he never had a serious affection.

Two months before he came under my observation he states that he had intercourse with a woman whom he suspected afterwards. She was a prostitute and he thought that she was "unhealthy." She persisted in turning her back to him as they lay in bed. Three weeks after the intercourse a "sore" appeared in his right groin. It was not painful, but it would not heal under ordinary treatment. At the time I saw him, two months after intercourse, there existed a papular asphilide over the body. It was more apparent upon the back. The case was undoubted.

An examination of the case shows that the chancre has persisted owing to the lack of proper treatment. The chancre is ovalish in form, its long diameter being more or less parallel with Poupart's ligament. Its size is about one by one and a half inches. It is located about four inches from the root of the penis. There was a marked induration present and no pain could be elicited upon pressure. The glands in the groin were apparently not involved; for, whilst somewhat enlarged they did not present that induration which is so characteristic of syphilitic adenopathy. The specific treatment which was inaugurated produced rapid improvement in the chancre and the eruption.

Case 2. Stella W., aged nine, is a little girl, all of whose

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habits are good. Her father and mother are dead and she is living with her stepfather and stepmother. She has never had any illness before. On account of her peculiar family relations no definite family history or past personal history can be obtained.

The history of the present trouble is given about as follows: The child was near a market house picking up potatoes when a man came up and told her that there were some better potatoes in a near-by alley. She went there, and the man followed her. Then, placing his hand over her mouth to prevent her screaming, he attempted to criminally assault her. The next day her genitals began to burn, and the following day six sores, each about the size of a dime, appeared. The patient was not seen until two weeks later. Upon examination the hymen was found intact and the urethra and ostium vaginae appeared red and irritated. The urethra was puffy and a slight muco-purulent discharge oozed from it.

Further examination developed the fact that there existed condylomata of the vulva which had the odor characteristic of the syphilitic. They were moist and somewhat painful on pressure. No trace of a primary lesion was in evidence in this neighborhood. A search led to the discovery of the chancre which was located in the left groin, rather high up. The chancre was a little larger than a silver dime and distinctly indurated. No indurated lymphatic glands could be made out in the groin. Mercurial inunctions were ordered, and, after six had been made, the condylomata had disappeared without any local treatment. The chancre also was markedly improving.

Among the interesting points to which the two cases draw attention is the unusual location of the initial lesion. In taking the cursory glance at few of the better works on syphilis and such as devote some attention to extra-genital chancres, the accounts are found to be very unsatisfactory. Thus Charles Mauriac,[1] in a list of 2065 chancres, does not

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note among the localities attacked one case where the groin was the seat. Melchior Robert[2] does not mention it in 202 cases of extra-genital chancres. L. Duncan Bulkley[3] has gathered statistics of 9058 cases, but in none of them is there one of chancre of the groin. E. Lang,[4] James S. Howe,[5] Hyde and Montgomery,[6] and White and Martin [7] do not note this locality. I will not continue to enumerate the authors who have been consulted, nor the journal articles read without result. The only author whom I have found to mention chancre of the groin is Jullien,[8] and even here the information given is of the most indefinite character. In summing up the various statistics which he gives out of 3,929 cases of chancre the statement is made that eight were of the thigh, the groin and the genito-crural fold. How many of either there were is not mentioned. Taking all these various experiences, it may be safely concluded that chancre of the groin is, to say the least, a rare lesion. The only representation of a similar lesion I have seen is in the work of Jullien, on page 551. This is an engraving representing a large oval chancre in the right inguinal region, and the drawing was made from a moulage in the collection of Dr. P. Horteloup. The chancre is situated rather low, but could be as easily identified as one of the lower part of the abdomen.

Another interesting point in connection with the two cases given above is as to the manner in which the inoculation occurred in each one. In case 1, the patient states that the woman turned her back upon him and turned her buttock, upon which she had a pustule, into his groin. This easily accounts for the infection, more especially as he confessed to not having washed himself for two or three days after having the pus of the infecting pustule put upon his skin. In case 2, the history is not as explicit as in case 1, but it is most probable that the brute in human shape who attempted to rape an innocent child, in his erotic furor struck the child in the groin with his infected virile member, and in that manner inoculated her. Whilst these inoculations are, perhaps, somewhat

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obscure, the evidence in one is morally a proof of the method by which it occurred, and in the other the *modus operandi* is as clear as in the majority of cases of extra-genital chancre.

In both the cases given there was lacking one of the signs so much relied upon by syphilologists — the induration of the lymphatic glands. These could not be found in the groin of either patient, but it must not be forgotten that from their location the chancres could hardly produce adenopathy of subcutaneous lymph glands. As the patients were not sufficiently emaciated, the deeper glands of the abdomen could not be distinctly made out to be indurated. The eruption in each case, together with the induration of the chancre and the results of specific treatment removed all possibility of a doubt that each was distinctly syphilitic. One not conversant with syphilis and its symptoms might have mistaken the chancre in one case for a chronic ulcer and the other for venereal warts or condylomata in view of the double fact that the vulvar growths were not exactly flat and that there was a slight oozing from the urethra.

In closing this brief sketch the object of the writer will have been attained if he has succeeded in impressing upon all the necessity of thoroughly examining each case which comes under observation.

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SOME OBSERVATIONS OF SECONDARY SYPHILIS.

By William Frick, of Kansas City, Mo.

Secondary syphilis, it seems to me, could be appropriately classed with the eruptive fevers. We have the period of incubation, the prodromal period and then the cutaneous eruption. The reasons for it not being so classed are the mildness of the accompanying fever and the long period of evolution. This stage of syphilis is essentially made apparent by the lesions on the skin and mucous membranes. Some internal organs have at times been shown to be affected, very much as is the case with measles or scarlet fever.

For instance, only a few weeks ago a young man applied for life insurance. In the examination it developed that the applicant was in the fifth month of secondary syphilis and undergoing active treatment. Urinary analysis showed albumen present in considerable quantity, which I am satisfied was due to the syphilis.

The importance of being able to recognize a secondary eruption will be seen by considering the following facts: —

First. This is frequently the first intimation given of the disease, either to physician or patient, the primary lesion having never been recognized, or in many cases never seen. We can understand how a small, hard sore in some obscure place gives very little disturbance and passes unnoticed.

2d. This is especially the contagious period of the disease. The majority of contaminations occur in this period of the disease. All secretions at this time carry the contagion and the great prevalence of mucous patches makes this time a dangerous one to those who come in contact with the afflicted one.

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3d. This is the period for active treatment if we would secure the best results.

To illustrate the first point mentioned let me mention two cases. Mrs. ——, a widow about thirty years of age, was greatly concerned about a "breaking out all over her body and limbs." An examination revealed a well marked macular syphilitic eruption over the entire trunk and limbs and just beginning on the face. There was also a slight syphilitic fever and beginning nocturnal headaches. She had been rather unwell for several days but the eruption was what brought her to me. Altogether she presented a typical appearance of early secondary syphilis but without any history at all of a primary sore.

Mrs. B——, a married woman with a two-year-old baby had not been feeling well for some time. She had headache and a tired feeling, with a macular papular eruption and beginning sore mouth. The sores in the mouth proved to be mucous patches and the eruption was syphilitic. A careful interrogation of this patient revealed the fact that several weeks before she had an insignificant sore in one corner of her mouth, which was slow in healing. I learned further that this lady had a brother who had been indisposed for some months and found it necessary to take a trip to Hot Springs, Ark., for his health. This brother was accustomed to kiss his sister when they met and in this way had communicated the disease to her. The husband of this lady contracted the disease from his wife, which was not surprising, since it was unrecognized for some time. The baby fortunately escaped infection.

The macular eruptions are usually the earliest manifestations on the skin of secondary syphilis. A small amount of fever and malaria may precede the eruption a few days, and nocturnal headaches frequently accompany it. These macular eruptions, when they occur in the usual way, covering the trunk and possibly also the extremities, and accompanied by slight fever and nocturnal headache, present a picture that

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can hardly be mistaken for anything else, even if the history of a primary sore is absent. But we do not always have typical eruptions. The following case represents an unusual form of macular eruption.

M. B., a young man about twenty-five years of age, was brought to me with a supposed palmar eczema. The palms were cracked and peeling but not itching. A close inspection showed a macular eruption covering palms of the hands and soles of the feet. Macules were quite large, some about the size of a silver three-cent piece, while others were only half that diameter. The lesions were numerous, frequently running together and forming patches. The skin over these patches cracked and peeled, showing a red surface beneath. This cracked and peeled condition produced a condition somewhat resembling eczema on superficial examination. More extended examination of this patient revealed no eruption on other parts of the body, nor had there been any, but he had a sore mouth. The sores in the mouth looked like nothing else but mucous patches, and consequently this helped to a diagnosis. In this case, also, there was no history of a primary sore. The patient only remembered having some cracks about his lips a few weeks previous. This is the only case of this kind I have ever seen, and it improved very readily by mercurial treatment. The large papular, or lenticular syphilid is perhaps the most frequent skin lesion, and disappears quite readily with the usual treatment, but the small papular syphilid is quite a different matter. It proves rebellious to treatment. It has been my fortune to treat several of these cases and I am glad this is rather a rare form. The papules are about the size of an ordinary pin head and acuminate in form. Sometimes these lesions are clustered and again they are scattered. My cases have shown the principal eruption about the face, neck and arms. They have been among the most stubborn cases to yield to treatment. My treatment for these cases has been the ordinary treatment for any secondary eruption. It takes four or five months,

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according to my experience, to get rid of this form of the disease. The pustular syphilid may be mistaken for acne; or, if it is distributed over the body generally, it may be mistaken for small-pox, especially when a mild epidemic of small-pox prevails, as for some months past. Some other manifestation of syphilis can, however, nearly always be found either present or the history of other eruptions past. We may also remember that small-pox in the pustular stage has a secondary fever accompanying it. Some observers claim that this secondary fever is always present in the pustular stage of small-pox, however mild it may be. These pustular syphilids indicate to me poor nutrition of the patient and will require treatment accordingly.

I would draw the attention of the gentlemen present to the importance of condylomata lata as a diagnostic point. These large, flat warty growths occur at about the same period of the disease as the mucous patches, and have been called by some writers mucous plaques. Their development is favored by warmth, moisture and friction, and hence they are found between the buttocks, around the anus and genital organs and the inner part of the thighs. Histologically they are enormous enlargements of the papillae of the skin. They are elevated to a greater or less degree and have a moist surface. They are often present and when seen make a diagnosis of syphilis positive, as I believe they are found in no other disease.

The mucous patch comes near being a constant factor in secondary syphilis. Very few escape it entirely. Generally by keeping a patient on good constitutional treatment and using an antiseptic mouth-wash, these cases get along with a moderate amount of trouble. One of my cases, however, proved especially distressing on account of the extent of the sores and the long time required to get them well. For a time it appeared that almost the entire surface of the buccal mucous membrane and lips and tongue was involved. The use of solid food was impossible and even liquids were distressing to

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this patient. Healing went on very slowly. One side of an ulcer would be healing while the other side would at the same time be extending. Then time after time fresh patches appeared on surfaces which had been sore before but had healed up. In this way this phase of syphilis worried my patient for more than two years in spite of mercurial inunctions, tonics, and antiseptic mouth-washes. I would like to know the experience of those present in treatment of this condition and results of treatment.

One case of syphilitic paronychia gave me a great deal of trouble. Mr. F.—— had contracted the disease two years before the beginning of this particular manifestation of it. I had seen him first about eight or nine months before with mucous patches in his mouth, which yielded very well to treatment. He seemed to do well with a combined tonic and mercurial treatment, until the skin about one thumb-nail became inflamed. The beginning was a small indurated inflamed spot of skin on one side of the nail. It slowly spread around the nail and back toward the hand. Gradually it involved the skin of nearly the entire thumb. The inflamed skin frequently cracked and peeled off, but the new skin beneath immediately took on an inflamed appearance and went through the same performance again. This was only painful when the skin cracked deeply at the edge of the nail. There was some tenderness about it which prevented the man using his thumb as he ordinarily would. Hot water applied freely, with internal giving of mercurials and tonics seemed to hold it down somewhat at all times, but it required sixteen months to stop the process. In this case I did want to give the iodids on account of the lateness of the lesion, but he could not get the benefit of this treatment because of his becoming iodized so quickly. A very few five-grain doses produced acne and coryza every time they were tried and they were tried repeatedly. Various forms of the iodids were tried and always with the same result. Vegetable alteratives were also used, but

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more benefit was derived from mercurials than anything else. Mencauro was also used in this case but with hardly as good results as the protoidid of mercury, mercurial inunctions came in for consideration and use, but no better results were obtained than with the internal administration of mercury, the disease finally disappeared while he was using the protoiodid internally with some general tonics.

In treating this stage of syphilis we must make mercury our sheet-anchor, but we must not push the drug until it becomes a detriment to the patient. I find the majority of my patients do as well with the internal use of the drug as any way. With these I use it in that way because it is the easiest method. I prescribe $\frac{1}{4}$ grain pills or tablets of the protoiodid and have my patients take three or four daily. This will usually keep the bowels open sufficiently but not too much. Watching carefully I prevent salivation by withholding the drug if any such symptoms make their appearance. Some patients cannot use the drug internally, because it causes some undue irritation of the alimentary canal. With these I use the mercurial ointment by inunction. The amount is gauged to suit the patient and care is used here also, not to produce ptyalism. In most cases it can be used in dram doses daily. The body can be divided into six or seven divisions and the ointment thoroughly rubbed upon one of these each night until each of these divisions has been used. After this my patient takes a bath. This cleanses the surface of the body and opens the pores of the skin, assisting elimination and placing the skin in better condition to take up the ointment again. If it is possible I have my patient take a Turkish bath, or as a substitute a Turkish-bath cabinet may be used. This cabinet I find a very convenient affair, since it can be used in the home just before retiring. These baths are given about once a week, with any treatment internal or otherwise. I do not like the hypodermic method of medication in syphilis on account of its liability to form abscesses and would not use it except where a very rapid

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effect of the drug must be obtained. I believe these are the only methods of administering the drug worthy of consideration. It is necessary to see carefully to the nutrition of patients undergoing treatment. Frequently a good tonic course will be of decided benefit, either along with the mercurial treatment, or it may be necessary to quit mercurials for a time and give tonics alone or combined with vegetable alteratives. Iodids I find of very little value until quite late in the secondary stage. Arsenauro I have never found to possess any advantage over the mecurials mentioned. For its specific effects on secondary syphilis mercury is so much better than anything else, it is hardly necessary to speak of other drugs.

If some of the gentlemen have found a different treatment valuable in the stubborn cases, such as I have related, I would like very much to learn the facts.

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THE BRANSFORD LEWIS URETER-CYSTOSCOPE.

By Bransford Lewis, St. Louis.

The instrument herewith presented is the product both of necessity and of my inability to satisfactorily use the instruments already in vogue. In its make-up I must acknowledge the help given by the urethroscope of Valentine, and the curve-tipped straight-tube cystoscope of my friend, Dr. Witherspoon, whose idea, so far as it goes, I have adopted in the framing of the present instrument. While the tube of Dr. Witherspoon does afford a certain view of the air-distended bladder, it was completely inadequate as a means of arriving at ureteral catheterization.

This instrument has that definite object in view: The catheterization of the ureters in male or female; and I believe it accomplishes it, as well as certain other very advantageous features, with a degree of ease, certainty and freedom from irritation not equalled by any instrument hitherto devised.

It consists of a tube, which carries on its upper surface, the conducting-wires for the electric light, and within, on its lower walls, a small tube for guiding the ureteral catheter to the desired point — i. e., into the ureteral opening. At the ocular extremity is the handle for controlling the direction of the instrument; at the distal end, contained within the curved tip, is the electric lamp, of low tension, affording sufficient light for illumination, but generating hardly any heat; permitting, therefore, the use of the cyostoscope within the empty bladder and without the complicating presence, and often, interference of fluid. The light from the lamp is shed on the adjacent membrane through the glass window sealed in the roof of the tube just below it. The tip of the cys-

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toscope is a hollow cap, attached by a screw, and may be removed for replacing a burnt-out lamp.

To facilitate introduction into the bladder, an obturator is furnished, which closes the distal orifice until it is removed, preventing scraping of the membrane against the edges of the opening; but, at the same time, these edges are so rounded that they may be brought in contact with the membrane within the bladder; or the instrument after being withdrawn into the prostatic urethra a certain distance, may be pushed back into the organ without injury to the surface coming in contact with them.

A small silk-web ureteral catheter completes the instrument. From this brief description, which comprises all essential details, it is evident that the instrument is extremely simple; and that, I think, is one of the chief advantages. Its freedom from complexity relieves it of many of the sources of difficulty encountered in the use of the older forms. It has no lenses to intervene between the eye and the object of investigation. Lenses must be perfect to be of any service whatever; and perfection in them is both expensive and difficult of attainment; and after perfection has been attained, the usefulness of the instrument may be destroyed in an instant by the clouding of the cement holding them. A year ago my Leiter cystoscope suffered in this way and it took a trip to Europe, and six months' time to replace it in my hands ready for use.

The window is so placed that should it become smeared with pus or blood, it can be easily cleaned by a wire swab without removal from the bladder.

The lamp is brought within a half-inch of the membrane undergoing search for the ureteral opening, which directness and closeness of illumination is of immense advantage in facilitating its discovery.

In mentioning some of the impediments to ureteral catheterization with the Casper, the improved Nitze, the Brenner, or the Albarran instruments, Dr. Brown (*Annals of Surgery*,

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Dec., 1899) mentioned the difficulty of inserting the catheter where there is a precipitous trigone. Indeed, this condition is put down as "impracticable of entry with any style of catheter cystoscope." I believe that such a difficulty will be readily overcome by this cystoscope, with the patient in tne knee-chest position. In that position the bladder being inflated with air and drawn downward and forward by the abdominal viscera, the trigone is brought forward into view and within reach of the catheter. If necessary, the rectum also, may be distended with the aid of a colpeurynter, to increase this effect.

Another difficulty to which attention is called in the same paper is that met with when the bladder is so acutely sensitive, or contracted, that only two ounces or less of fluid can be retained by it. Under such circumstances the Brenner instrument was the only one offering chances of success, according to the essayist mentioned. It seems needless to mention the fact that with the present instrument no fluid at all is introduced, and it is not desirable to have the bladder distended to any marked degree, even with air. Moreover, the absence of fluid prevents the clouding of the field of view by inflowing blood or pus. On the contrary, the flow of blood or pus from a ureteral opening serves to assist in the discovery of the same. Consequently, the prolonged irrigation or frequent changes of fluid is done away with.

STERILIZATION.— It is well known that the cystoscopes usually employed for this purpose are hardly sterilizable by ordinary means — by steam or dry heat, for instance, since their delicate construction does not admit of it without risk of injury. Before using this instrument it may be put into a steam sterilizer and cooked to one's satisfaction; but the lamp must be removed temporarily for the purpose.

In a recent paper on a subject allied to this, Dr. Lilienthal (*Journal of Cut. and Gen. Urin. Dis.*, Mar., 1900) has this to say: "In by far the greater number of cases in which catheterization of the healthy ureter is practiced, disease of

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the other kidney or bladder is present, and the region about the ureteral orifice, not to mention the ureteral mucous membrane, is anything but sterile. Efforts at disinfection are of necessity incomplete. First, because it is not possible actually to disinfect mucous membranes; and again, because there is constant soiling from the other ureter. The danger is, theoretically, and perhaps practically, minimized when the catheterization can be done by the dry method of Kelly in which the ureteral catheter need not touch any tissue except that at the mouth of the ureter itself."

The same advantage is afforded by the instrument which I present: the inner walls of both cystoscope and catheter-tube are sterilized, in the manner mentioned, so that they will not contribute any organisms to the sterilized catheter, and the catheter emerges from the inner extremity of its tube to pass directly into the ureteral opening, without touching either fluid or mucous membrane save that of the ureter itself.

I have made no special provision for catheterizing both ureters at the same time. Drainage of the two ureters at the same time separately may be accomplished in either one of two ways: By withdrawing the cystoscope after catheterizing one of the ureters, leaving the catheter in that ureter and reintroducing the cystoscope and making the second catheterization of the opposite ureter; or, the first ureter having been catheterized, a soft rubber catheter is run through the cystoscope into the general bladder cavity and allowed to remain there as the instrument is withdrawn.

With regard to the latter arrangement, there is some doubt as to its reliability on the part of some who think that possibly the ureteral catheter already in place may not collect all the urine brought to it, allowing some of it to escape into the bladder and affording, thereby, a mixed product for the rubber catheter to drain. However this may be, there are some operators who do rely on this method. Its reliability must depend greatly on the patency

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of the catheterized ureter. If it is tight and snug, the catheter will probably collect all the urine; if it is a loose fit, some will probably escape and make inaccurate results. So that the operator should be prepared to exercise his judgment in individual cases. Another alternative is that of making the two ureteral catheterizations at different sittings.

TECHNIQUE.—General anesthesia will seldom be necessary for the use of this instrument. Except for the unusual decubitus (the knee-chest position) in which the patient is placed, there is little that differs in the operation from the introduction of any ordinary steel sound. There is no long manipulation to be carried out after the operator becomes accustomed to the work; there is no burning from the lamp, which, as you may notice, is without any marked degree of heat, and, so far as that feature is concerned, the instrument can occasion absolutely no distress. As soon as the catheterization is accomplished, the cystoscope is withdrawn, the patient is allowed to lie on his back, with the catheter draining the ureter as long as desired; but this part of the procedure, also, is without pain, unless possibly the ureter be in a highly inflamed state from tuberculosis, for instance, in which case a morphine injection will remedy matters.

For these reasons cocaine anesthesia suffices. It is effected by the means of the deep urethral syringe, five per cent solution being employed; or, better, by the use of cocaine tablets placed at the neck of the bladder by means of my urethral cocaine-depositor.

With the obturator in position, the bladder well drained of all fluid contents, the patient placed on his hands and knees with the legs separated, the cystoscope is introduced into the bladder. On withdrawing the obturator, a teaspoonful of urine usually passes through the instrument. If any remains in it, it may be pumped out with the little bulb syringe, which is provided for the purpose. With the patient's chest well lowered to the table and the obturator withdrawn, allowing air to rush into the bladder, the distension of the latter is

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facilitated by the traction on it of the abdominal contents; and the result is that the bladder is brought into position for the examination and search for the ureter. In certain respects the view afforded by this instrument excels that given by the most complicated and expensive cystoscopes, in that what *is* seen, is seen without anything intervening between the eye and the object: No lenses, no mirrors, no fluid medium being used in connection with the instrument. The field of view is similar to that given by the Pawlik-Kelly cystoscope in the female. The field of search is, of course, one or the other of the two upper angles of the trigone; to reach which, the cystoscope must be held at an angle of about 30 degrees with the axis of the urinary outlet. In order to find the ureteral opening, it is usually best to push the instrument to a point a little beyond where it is supposed to be, and then watch closely for it as the cystoscope is withdrawn. Having found the opening it is no trouble at all to pass the catheter into it, as the inner tube through which it travels gives full control over its direction with the free right hand. It is done, too, in plain view of the eye.

Furthermore, to the sense of sight may be added in the investigation with this instrument, that of touch, which must prove at times of material value. Recently a surgeon friend of mine was investigating a bladder with a Casper ureter cystoscope. In two seances, and under chloroform anesthesia, he was unable to determine whether a grayish substance that surrounded the left ureteral opening was a pseudo-membrane or a phosphatic incrustation. It looked like either one of these, but a differentiation between them could not be made, so that certain treatments were inaugurated (bladder irrigations, etc.) in order to arrive at a decision. If a metal probe could have been placed against the substance, as can be done with this instrument, the decision would have been immediate and definite. With lenses to intervene, this maneuver is out of the question.

The same remarks apply to various operative measures.

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Although Nitze and others have devised ingenious cystoscopes for operating within the bladder, their manipulation is necessarily difficult and their usefulness limited by the necessity of having a clear fluid for affording a good view of the field of operation.

Through this tube caustic applications or actual cauterizations are effected, precisely as is done in the urethra through the endoscope.

It is my experience that with the various cystoscopes hitherto in vogue, where there was bleeding or rapid flow of pus into the fluid contained in the bladder, the resulting view was a mere dim outline of the object, and not a clear-cut image giving tangible evidence of its composition or its thickness and depth of involvement of the tissues. This is not always so, but it is undoubtedly true in many instances.

A URETER-CYSTOSCOPE FOR THE FEMALE.

For several years ureteral catheterization has been *un fait accompli* and to a high degree of satisfaction to the profession; the Pawlik-Kelly method is in daily use, the world over, for both diagnostic and therapeutic purposes. And yet, if this method can be improved by being made easier, or more certain of accomplishment, or if the duration of the search for the ureteral openings can be shortened for those operators who are not such experts in its use as is Dr. Kelly, or if the pain often suffered by the patient from the preliminary dilatation of the urethra or the introduction through it of a cystoscope sufficiently large to afford a good view, can be obviated, then these objects should be accomplished, even though the instrument already in use has proved of such inestimable value.

I believe that the two special features of fixed, internal, heatless illumination and of complete control over the internal end of a flexible ureteral catheter, as here furnished, when applied to a tube of proper form, will secure the advantages mentioned. I have placed the designs for such an instrument

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with Mr. Willbrandt of St. Louis, who has lent me his best efforts in the rapid and accurate execution of my plans for the production of this instrument in time for its preliminary test ing in the live subject and its presentation at this meeting.

I have tested it and succeeded admirably with it at the City Hospital in St. Louis, in the presence of several medical friends, catheterizing the male ureter and draining it effectually.

627 Century Building.

DISCUSSION OF PAPERS BY DRS. DUMESNIL, FRICK AND LEWIS.

DR. WM. F. FRICK, Kansas City: I have been much interested in these forms of chancre described by Dr. Dumesnil, though I do not remember of reading any reports of chancre of the groin before. We know, however, that chancre may develop at any point of the body; it depends upon the point of contact with the poison and I see no reason why we should not have chancre of the groin as well as anywhere else if the syphilitic virus comes in contact with that point.

Dr. A. H. OHMANN-DUMESNIL, St. Louis: There are some points that Dr. Frick did not elaborate very much and there may be some misapprehension in regard to them. He says there was no history of chancre given in the first case that he reported. I never expect a patient to give me a history of chancre. I find it if possible. It may be that the chancre is inside the rectum and you cannot expect to get a history of chancre. I never believe syphilitics or morphinomaniacs. As Ricord says, look for it and you will find it if you look long enough. We are told that a pustular syphilide may be taken for small-pox. That is true enough; it resembles it at a certain stage, but you will always find that the pustular syphilide has the trait that it never forms a vesicle while small-pox always does. This is a distinguishing point and by keeping these simple points in mind it is hardly difficult to make a differential diagnosis especially as there is the concomitant symptom in syphilis of the syphilitic eruption. I was rather surprised that the doctor gave such mild treatment. He spoke of iodide of potassium in five grain doses. I give mercury. Mercury alone will cure. Iodide of potassium alone will not cure. Mercury alone may be given in every stage and iodide of potassium cannot be given with benefit in every stage. There are conditions in which iodide will not do any good; whereas the mercury will. It is almost axiomatic that mercury given continuously will cure, and you know yourself that in the severe cases, which have been more or less neglected will under the strenuous use of mercurial inunctions get better. That is what has made the reputation for Hot Springs, because

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they do use mercurial ointment. Now in regard to the matter of abscess; in 50,000 injections I never had one form. I keep the part clean and perfectly aseptic and I use soluble mercurials not insoluble; I use bicyanide of mercury which itself is one of the strongest antiseptics known. The patient may object to it because it is intensely painful, but you overcome that by putting some cocain in the solution without interfering with the action of bicyanide. I give a solution of 8 centigrams of bicyanide and 32 grams water and give a cubic centimeter injection every day and have no untoward symptoms.

Dr. J. F. BINNIE, Kansas City: I wish to ask Dr. Dumesnil a question. He speaks of the great gratification or pleasure that he gives his patients by the use of the cocain solution mixed with the mercury solution, I wish to ask him if he does not by this means establish the cocain habit in his patients.

DR. WM. FRICK, Kansas City: Dr. Dumesnil speaks of the history of chancre — that wherever syphilis is present there must be a chancre. But we may not see the case until the second stage — when there is a secondary eruption and then we may not be able to find any evidence of the chancre; then, too, the chancre sometimes is an insignificant thing so far as the lesion is concerned; it may be small and not very well marked. Then sometimes the chancre is in the rectum, as the doctor says, and then it may not be very easy to find; or it may be in the vagina and then not be very easy to find. In the first case that I mentioned, I suspected that the chancre had existed in the vagina, but I did not find it, I did not look for it; it was a case of secondary syphilis and I did not think it necessary to look for the chancre; I knew it had existed somewhere, but it was an immaterial thing so far as the treatment was concerned, consequently I let it go. In regard to pustular syphilides, we know they are pustular from the beginning, but when you have a patient who cannot tell you just exactly the form of the lesion, who is ignorant of whether there was a vesication stage or not, it is a different matter.

DR. A. H. OHMANN-DUMESNIL: These hypodermic injections of bicyanide are generally used in cases of nervous involvement and they do get rid of the nervous trouble by the giving of the medicine.

DR. J. F. BINNIE, Kansas City: That was not my question. My question was in regard to the administration of the mercury hypodermically plus cocain to take away the pain; the patient enjoys this injection which would, without the cocain, be painful. Does that not result in beginning the cocain habit in such patients; is it not an exceedingly dangerous practice?

DR. DUMESNIL: No, sir. I have tried to answer that. It is not on account of the relief of the nervous trouble that the pleasure comes. They never ask for cocain and I do not let them know that they are getting cocain. I do not tell my patients what my formulas are. I tell doctors but not my patients.

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SMALLPOX — ITS PREVENTION AND TREATMENT.

By R. S. Kelso, M. D.

Smallpox is a disease which the great majority of physicians will never be called upon to treat, yet every physician should have firmly fixed in his mind some definite ideas as to its diagnosis, prevention, and treatment. Otherwise he may be called to a case where it is little expected, and failing to recognize the disease, do an inestimable injustice to the community by failing to take the proper steps for its suppression.

In recent years, the death rate from smallpox, as compared to the entire number from other causes, is small; yet its loathsomeness, its extreme contagiousness, its liability to disfigure the patient for life, and its high percentage of mortality, make it perhaps the most feared of all diseases to which the human family is subject. Yet, strange to say, it is the only disease for which we have a safe and infallible preventive.

In this disease, perhaps more than any other, a correct diagnosis is all-important. I have never attempted to accurately diagnose an isolated case by any symptoms previous to the eruption, though a persistent fever with a temperature of 104 to 106 degrees, with much aching in the back and hips, is very suspicious. The eruption appears almost uniformly in two days after the onset of fever, which is a little later than scarlet fever, and a little earlier than measles. The eruption begins as a macula, when it is liable to be mistaken for scarlet fever, but lacks the sore throat and the diffuse redness. In a few hours it has reached the papular state when it may be mistaken for measles, but lacks the coryza, lacrymation, etc., and the papulae become constantly more and more prominent for eight days, passing from papulae to vesicles, and then to pustules.

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When seen only in the vesicular stage, it has been mistaken for chicken-pox by persons ignorant of the nature and symptoms of both diseases. The history of the case ought to clear up all doubt. Chicken-pox rarely has any severe fever or other constitutional symptoms. The eruption springs up as a vesicle at once, and is full size in a day or two, and gone in a day or two more; while small-pox from the initial fever to the exfoliation of the scabs on the hands and feet is never less than three weeks. The most characteristic symptom, however, according to my observation, and one which is never absent, is the umbilication of the papulae vesicles, and pustules. This umbilication when once seen and carefully observed will ever afterwards be recognized, but it is not so easily made plain by description. It begins about the third day of the eruption when each papula looks as if it were surmounted by a little flat vesicle. As the vesicle fills it seems to fill faster round the edges than in the center so that the center is perceptibly depressed, and this depression remains until the bursting of the pustules from the eighth to the tenth day, or if the pustule does not break, which is frequently the case in the concrete form, it begins to dry away in the center first so that every pustule will have a dark spot in the center. I have frequently felt positive of a diagnosis before this umbilication has appeared, but have always waited for it before ordering a patient to the hospital.

As to prophylaxis, I have already said that we have for this disease a safe and infallible preventive. It is needless to state that I allude to vaccination. In my experience it has more than justified all the claims that have been made for it by its friends. In no case has a person recently vaccinated had the slightest symptoms of the disease, though many have been constantly exposed in the same room with the most virulent cases from their incipiency until death or recovery. One young woman who had never been in the slightest degree exposed to the disease, volunteered to act as

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nurse, if I would assure her candidly that I believed there was no danger. I did so with the same degree of confidence that I should have done if she had just recovered from the disease. She went, was with many of my patients, attended on one lady until she died; washed, dressed, and helped put the body in the coffin, and the result fully justified my assurance.

Vaccination, also, though so mild as rarely to make the subject sick for even a day, is yet so powerful as utterly to destroy the virus of small-pox which has already entered and contaminated the system, if it has sufficient time. In my experience the incubation period of small-pox has averaged about fourteen days, that of vaccination nine, hence those vaccinated before the fifth day after exposure have escaped. On the fifth or sixth day it did not prevent the disease, but modified it; later than that it did no good. The following cases will serve as examples: —

Mr. E., who did not know that he had been exposed, and who was boarding with a family consisting of about eight persons besides several boarders, was taken with small-pox in its most virulent form and died. On the second day of the eruption, and the fourth of the disease, all the persons exposed were thoroughly vaccinated, and all escaped except the mother, and as she took it in five days, it was thus proved that she did not take the disease from Mr. E., but acquired it from some other source.

Thomas P., son of a neighbor, was attacked about the same time as Mr. E., and the family consisted of about the same number of persons. On the fifth day I vaccinated all members of the family including two boarders, and all had light cases of varioloid except the father, mother, and one boarder. The father escaped without a symptom, and the boarder with some fever but no eruption, but the mother, whose vaccination was somewhat delayed in its action, had a very severe case of varioloid, though light if it should be termed small-pox.

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A Mr. F. was with his brother when the latter broke out with small-pox, and continued to wait on him. I vaccinated him on the fourth day of his brother's eruption. In about two weeks after exposure he was taken with the usual symptoms of the disease, and in due time the eruption appeared so thick that I told him I feared his vaccination had done no good, though at that time his arm was swollen and painful. Two days afterward I found him up waiting on his brother again, and he greeted me with, "Well, Doctor, your vaccination has knocked the stuffin' out of my small-pox," and so it proved. The eruption had receded and was soon gone, with the exception of perhaps a dozen papulae on his face and a few on his body which went on to maturity.

I am often asked how long vaccination will protect. This question I am unable to answer definitely. Its power is certainly weakened with time. One of my patients had rather a severe case of varioloid, who had been vaccinated fifty-seven years; another, who had been vaccinated forty-seven years, had a very mild case and scarcely went to bed, and his wife, who had been vaccinated forty-five years, was but little worse than her husband. Again, a gentleman who had a large pale scar on his arm, and said it was from vaccination eight years before, had the disease so severely that I certainly should never have suspected that he had been vaccinated at all. His wife who had been vaccinated about the same time as her husband, I revaccinated in two or three places, but without success, and though she was with her husband constantly, and afterwards with a daughter, she escaped untouched by the disease. In the case of the husband I distrust the former vaccination.

There are many disinfectants which destroy the virus of small-pox, among the best being the bichloride of mercury, sulphate of iron, and the fumes from burning sulphur, and though rooms, clothing, etc., may be disinfected by them after the patient is well, there is no known substance that will so purify the air in the room of a patient as to protect other

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persons, without rendering it unfit for respiration, neither is there anything that is of the least avail when taken internally.

As no treatment will materially shorten the natural course of the disease, our object is to mitigate the symptoms, support the strength, and as far as practicable prevent pitting. The first object is best accomplished by controlling the fever from the first. This I have succeeded in doing best with acetanilide and cold applications to the face and head. As a rule I think there are at least four times as many papulae on the face as on any other part of the body according to space. This is not as many have supposed because the face is exposed to the air, but on account of the vascularity of the skin. After the papulae had appeared for at least twenty-four hours, I have in several instances caused a large majority of them to abort by the use of cold water. In other cases water applied to the face has prevented their appearance more thickly than on other parts of the body. That the eruption appears most thickly on parts where the skin is most vascular was nicely shown in one of my cases of varioloid. The lady had had erysipelas of the face on one side only, and that side stripped of its epidermis was yet red and tender, and the eruption appeared on that side almost exclusively. In another case the eruption appeared almost exclusively on the right hand and foot of a patient, those parts being affected at the time with inflammatory rheumatism.

As soon as the papulae begin to umbilicate I have adopted the plan of applying to the face and other parts where the eruption is excessive glycerine with carbolic acid in the strength of about thirty-two to one, and immediately dust with powdered boracic acid. This repeated three or four times a day prevents the burning and itching ordinarily so much complained of, and on the bursting of the papulae absorbs the virus and renders it non-irritating and almost entirely prevents the odor so characteristic of the disease in this stage. The pitting in those of my cases treated in

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this way was so slight that it almost entirely disappeared in a few months.

I try to give an abundance of good, nourishing food at all stages of the disease, and supplement it during the suppuration and declining stages with tonics and stimulants. Under the treatment thus outlined the death rate for unmodified small-pox has been about nine per cent, while I have lost no cases of varioloid.

In addition to the treatment of individual cases, when small-pox becomes epidemic, stringent measures should be taken to prevent the spread of the disease and to stamp it out. These consist essentially of the isolation of the infected, quarantine of the exposed, and vaccination; and adequate means must be adopted for their enforcement. Isolated families who are financially able to care for themselves may be quarantined at home, all members showing no symptoms of infection being immediately vaccinated. As soon as the vaccination proves effective on any one he can be disinfected and discharged from quarantine, but must not return, and if vaccination has proved effective on all then the quarantine can be raised as soon as the patient is well and the house and inmates have been disinfected. When houses are close together the affected members should be sent to the small-pox hospital and the others vaccinated and quarantined as before. Persons known to have been exposed and who belong to non-infected families should be sent to a detention ward, which should be situated some distance from the main hospital, and held for at least fourteen days from last exposure, or till vaccination becomes effective.

Very often when the mother of a family is sent to the hospital it is better to send the children also, as they are most likely already infected, and only vaccination can save them anyway.

The civil authorities usually appoint a physician to take entire charge of an epidemic, and give him their aid and influence. They are always anxious to know the exact truth as

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to the prevailing conditions, and act promptly on all suggestions of the physician, but he is always annoyed and hampered in the discharge of his duties by certain persons who assume to know much more than he does, and who for convenience I shall divide into two classes, pessimists and optimists. The pessimist hears and believes the most alarming reports of the spread of the disease into new localities, of the immense number of new cases, of numerous midnight burials, and of the efforts of the physician and the officials to keep the truth from the public. He keeps close watch on his neighbors, and the health officer is kept on the run to investigate every case of measles, scarlet fever, chicken-pox, or ache within a radius of miles, and the young man whose efforts to sprout a beard have brought half a dozen comedones to his chin, had better take to the woods. Still the methods of the pessimist lean toward the side of safety, the real danger being with the optimist. He doesn't believe there has been a case of small-pox in the city for seventeen years, and certainly no deaths from it in that time. The testimony of variola experts has no weight with him, as the cases are nothing but chicken-pox, syphilis, or Cuban itch. If a case occurs in his family he conceals it, or if it should prove a mild case, sends the patient out among the neighbors to prove that it could not be small-pox, otherwise the patient would be worse or dead. If his house is quarantined he feels that a great injustice has been done, and talks about shotguns and suits for damages. In either case he usually manages to expose a large number of his acquaintances. The optimist is found among all classes of society, but editors of newspapers are the worst, and what is very singular, is the fact that however optimistic an editor is in regard to his own town, he is always pessimistic as to neighboring cities. I am sorry to state in this connection that the optimistic halo sometimes envelops the heads and intellectual faculties even of members of our own profession.

In the epidemic recently pervading many parts of the

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United States the type has been very mild, a fact which has given some of our optimistic physicians, who have never been within a hundred yards of a case, a good opportunity to air their opinions. They claim that their investigations, conducted presumably by long distance telepathy, have proved to them that it is nothing more or less than Cuban itch. Now, I would like to ask one of these telepathic physicians to explain to me what Cuban itch is. The only itch I know anything about is the old fashioned scabies, caused by the burrowings of the itch mite or Acarus Scabii, a disease which is the same in Cuba, the United States, Europe, or among the Hottentots of Africa; a disease which, if left to itself, runs a course of "seven years" and then relapses, but if properly treated can be cured in three days. But this Cuban itch of ours always commences with a two days' fever, then an eruption which takes eight days to mature, then ten or eleven days to dessicate and fall off, giving it a term of three weeks in all, and I defy any doctor to shorten or lengthen its course materially by any kind of treatment. I also defy him to find a case of relapse, a case where the patient has had smallpox, or has recently been successfully vaccinated, or to successfully vaccinate a person who has had this Cuban itch. In fact it seems to be merely a refined expression for what we old style physicians term variola or smallpox.

Gentlemen, from what I have said of pessimists and optimists, you may infer that I have had some unpleasant experiences with them. This inference would be correct.

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REPORT ON MEDICAL EDUCATION.

By J. M. Allen, Liberty.

There is no calling or profession that demands more thorough mental training in the classics and sciences than that of the medical profession.

True, great minds with indomitable industry, energy and tenacity of purpose have accomplished much with meager education. These are the exceptions, few and far between.

Doubtless you expect me to make a standard of literary qualification preparatory to the study of medicine. This must be done with reference to the facilities and opportunities of the masses to acquire the standard of literary education.

I make the minimum a graduate of a public high school, where Latin, higher mathematics and physics are taught, or an equivalent if a student attends a college or university, certified to by its president. This standard is within the reach of every student who has the mental capacity, energy and grit to become a physician.

Do not understand me that this standard is either the full quota of knowledge that I think the student should have, or that it should remain permanent; on the contrary, it should be advanced as rapidly as the facilities for acquiring education will permit.

I hope you will observe that the standard I make is neither arbitrary or exclusive, but, as said before, within easy reach of all.

Next, how long should he devote to the study of medicine? At least four years and a half. The first nine months should be devoted to the study of anatomy, physiology, materia medica, therapeutics and collateral branches.

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The first two years of the course should be given to thorough reading of the text-books, the study of chemistry, bacteriology, histology, pathology, principles of medicine, surgery and obstetrics, with their collateral branches, and listening to didactic lectures on the various subjects.

Clinical medicine should be left for the last two years. Before this time the student is incapable of comprehending or understanding it.

Now begins his training for the practice of medicine, surgery and obstetrics, of which, in each department, he should have ample demonstrations by the professor in the person of a living being, so that his five senses can be educated to quickly recognize diseases and conditions in all their varied forms, and have demonstrated to him the counter force of medicine in preventing and relieving disease and repairing injury.

He should also have the opportunity of executing the principles of obstetrics and surgery in their departments on the living subject.

You will observe the first two years are strictly the scientific portion of medicine, and if the study stops here the student is far from being a competent physician.

The last two years is his education as to how to apply the fundamental principles which he learned the first two years, how to control the forces that lead up to disease from any source, — indeed, the last two years the individual's mind is converted from a scientific mind to a medical mind on a scientific basis.

Having been engaged in teaching medicine for the last twenty-five years, I have been in close contact with the medical schools of the State as well as those of other States.

I have studied those of this State carefully and well, and it affords me pleasure to state that their curriculum thoroughly covers the field of medicine.

Further, that they have rendered all the assistance in their power to advance the literary qualifications of students as

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well as keeping in the front rank in length and number of terms required in their course.

I think the profession of the State should feel proud of the high qualifications of the corps of medical teachers of the State.

These schools should be divided into three classes according to the foundation upon which each rests.

First. The medical department of the University of Missouri, supported by taxes paid by citizens of the State.

Second. The medical department of Washington University, supported by an endowment fund.

Third. The incorporated colleges which rest on money advanced by the teachers, and revenue received from the students.

The teaching and teaching facilities are equally good in each of the classes.

The requirements of preliminary education and the standard of graduation are about the same.

I have but two criticisms to make: One on the character of teaching in the department of anatomy, the other on the possibility of clinical facilities, — which you will observe I regard as all-essential.

The teaching of anatomy from a manikin is a fraud and an injury to the student, from the fact, if no other, that he never sees the parts in a natural condition; besides this, he loses the sensitiveness of touch that is developed by dissecting the dead subject.

Again, in many of the schools ten to twelve students are placed in a class to dissect and study anatomy on one cadaver, whereas, there ought not to be more than four, — far better, if only two.

The professor of anatomy should be rather a demonstrator of anatomy, beginning his dissection with the skin and handling every structure of the body, thereby teaching the student how to prosecute his work.

The majority of the dissecting rooms, where the students

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are at work cutting and slashing, laughing and talking, would remind one of a rough set of butchers instead of students.

My next criticism is on the clinical facilities of the schools. As a foundation for what I may say, I assert that it requires a population of one hundred thousand people to furnish enough anatomical material and variety of clinical material for one medical class.

I have heard the argument offered that small classes do not require so much clinical material. This is mere rot. If there is but one member of a class he needs just as much clinical observation as if there are a hundred in a class.

It is as much folly to propose to make an individual an athlete without gymnastic training, as it is to make a physician and surgeon without clinical training, or to make an anatomist without anatomical material.

Many students in our Western colleges learn before graduation that the school has been deficient in anatomical material and clinical experience, — and, deeply feeling the necessity of these things, they go to the large city to get this one thing needful.

In fact the post-graduate and polyclinic schools of the East owe their success to these deficiencies in the Western schools.

I am asked, are there too many medical schools in the State of Missouri?

To this I must give a yes-and-no answer, — there are not too many to teach the students the first two years, but there are far too many to teach the last two years when the student is being moulded to assume the duties of his profession.

If you will give me credit for sincerity and best wishes for my profession, I will give it as my opinion that the city of St. Joseph is not large enough to furnish anatomical and clinical material for more than one school which should be entitled to grant a diploma of M. D.

Kansas City is large enough to furnish above named material for two schools, owing to the fact that it has one Homeopathic school and one school for women.

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St. Louis should not have more than five schools.

Those schools that have the requisite population to insure sufficient anatomical and clinical material should be classed as first-class medical colleges.

The schools that have not this important requisite should be classed as primary medical schools, and be encouraged, as they will divide the number of students, making the classes smaller during the first two years.

None should be allowed to grant diplomas to practice medicine and surgery except the first class.

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QUACKERY *v.* MEDICAL ETHICS.

By C. R. Day, Mayview.

It is not my intention to discuss the whole category of quackery.

I wish to speak only of that phase which bears a relation to Medical Ethics. Medical Ethics, as drafted by the American Medical Association, is based upon the golden rule, but the fundamental desire on the part of the quack is based upon David Harum's explanation of the jockey's interpretation of the golden rule: "Do unto the other fellow as the other fellow would do unto you but do it fust."

Day by day and year by year the science of medicine and surgery is advancing with an unfaltering tread, not however without many a conflict with the scoffs of demagogues who are lurking beneath its fold; and looking backward over its pathway down to the present time, we find it strewn with countless wrecks of vaulting ambitions and cruel greed.

The advancements in medical science has placed it to-day far above the conception of the laity, and the physician whose education is based upon this greed for notoriety and fortune takes advantage of this state of affairs, and attempts to show the masses that he is actually and scientifically far ahead of all specialists in their various classifications.

Were it not for the fact that the diamond is of value, who would ever attempt to imitate its brilliancy? Just so with the gems discovered by our profession. In various towns in this State can be found men, who have graduated from reputable medical colleges, have succeeded in getting their names on the roll of some medical society, and are to-day distributing circulars telling of their progress.

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The public having heard of serum therapy, and having realized the value of diphtheritic antitoxin, are therefore easily caught when these fellows say that they are treating diseases wholly by animal serum. But their serum treatment reminds one of a mosquito,—a carrier of germs and always ready to put in his bill.

The medical profession, when properly followed, is one of the most noble callings on earth. In no other calling do men actually labor to stop their own pay, yet the honest physician does so. A great deal has been said, and yet much more remains to be said on the subject of needed medical legislation; but so long as the quack shelters beneath our own fold to backbite and to delude the public, just so long will we find opposition to health laws; for example, there are a few, and I hope but few, doctors who are yet skeptical upon the germ theory, and who go so far as to say that in the recent smallpox epidemic in various parts of the United States, that physicians and health officers have reported cases simply that they might make some money by deluding people into being vaccinated. The man who makes scientific medical research and is rewarded for his diligence, by the discovery of some important fact for the amelioration of suffering humanity, does not go forthwith and secure a patent, but gives the results of his labor to the world. The true value of the doctor's life and work cannot be estimated by the bank account of his administrator in Probate Court.

There are men who are so very desirous of getting a large practice that they disregard medical ethics, and become "case jumpers;" they are at all times ready to criticise the former physician in some former case when they fail to appreciate his efforts, and know nothing of the case treated by the former physician, their only aim being to decry others with the false hope of mounting the ladder of fame. Such men as these are found doubtless in every county in the State. Their presence in any community is a hindrance to the education of the laity, a stumbling block

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to scientific medical progress and a detriment to the health of its citizens.

There is another matter that demands our careful consideration, which I shall designate as proprietary nostrums. In administering drugs to a patient it is important that we know what we prescribe. The drug store of to-day abounds in a class of pharmaceutical compounds, of uncertain strength and contents, with some meaningless, copyrighted label said to be "for physicians' use only." Like the magnetic healer, when he tells his patient to close his eyes before this wonderful man attempts to make passes and throw, as it were, molasses from his finger tips; so in prescribing this class of drugs, the doctor asks the druggist to remove the label from the bottle or use another bottle. Both doctor and magnetic healer have the same object in view. "Keep your patient in the dark lest he become skeptical" with his money yet in his own pocket. As a rule these drugs are of doubtful value and are very unreasonable in price, yet they find followers who are so desirous of seeing their names in print that they write a testimonial after this fashion: "I have used several bottles of your valuable compound in my practice, which has been very extensive along certain lines, and I pronounce your preparation the grandest thing in the world." Such a testimonial is neither scientific, ethical nor honest.

Again, this country is becoming overstocked with medical journals, which fill about one-half of their space with such advertisements. I wish to say with regard to such journals that their profit is made only from such advertisements, and they do not deserve the patronage of one honest, conscientious practitioner of medicine. While infallibility does not and never will characterize the medical editors in their judgment upon advertisements, yet it is refreshing to see that some are doing the best they can, and their best is very good. A very frank statement appears in the editorial columns of a recent issue of the *Journal of the American*

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Medical Association. The *Journal* very succinctly states its policy with regard to advertisements, announcing that hereafter no proprietary medicine will be advertised by it, unless accompanied by statement showing the active ingredients it contains, and that no proprietary medicine which is advertised directly to the laity will be admitted to the advertising pages. The article furthermore announces, in a general way, that the so-called new remedies, — patent synthetics — will not be admitted to its pages, unless such products be of definite composition, the identity, purity and strength of which can be determined by physical and chemical tests. No compound nor mixture will be admitted if its composition or mode of manufacture is kept secret. Fake medicines have increased in number to an alarming extent; they have found introduction to the medical fraternity through reputable medical journals; the doctors and the journals have been imposed upon by lying and pretentious claims, and something should be done to separate this black sheep from our flock.

Having enumerated a few of the evils which, in my judgment, confront the medical profession, in conclusion I wish to say, that we should strive to be ethical, for if we devote our time and talent for the welfare of those whose lives are intrusted into our hands we will have enough to do without decrying others; and if we accomplish the needed medical legislation we must purge our own profession of stumbling-blocks in the way of those whose only effort in life is purely a mercenary one.

DISCUSSION OF PAPERS BY DRS. KELSO, ALLEN AND DAY.

DR. HALLEY, Kansas City: I do not doubt that every gentleman present has had experience with small-pox and they will all agree with me that Dr. Kelso has been in hot water. There is a reason why so many men have a failing about this question and assume a false position; there is a mercenary motive back of it. I know of nothing that can demoralize the business of a community so quickly as the report that they have small-pox in

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the community or that their town or village is quarantined against small-pox. I happened to live in a community 18 years ago which was quarantined for small-pox; we had something like 75 cases in that community; we had a good little town, a prosperous community — the business men were prospering and in 24 hours time after it was announced that we had small-pox in the community business was completely paralyzed, and for a time, I will say something like 8 or 10 weeks, there was absolutely no business that could prosper in that community. And that is the reason, gentlemen, why so many men take a strong position against the theory that you have small-pox in a community. Of course we are always ready to accuse our neighbors of having it; the other fellow has small-pox, in a different community; they are always ready to admit that; but you do not have it in your community. So far as the treatment of small-pox is concerned we are almost unable to do anything. But as the doctor said in his paper, we have an absolutely safe and certain preventive in vaccination, and it does occur to me that we ought to talk less about our liberty in this country and use a little more practical, common sense and demand of our people that they protect themselves and the community against the invasion of such a loathsome disease as smallpox. We ought to have, it seems to me, compulsory vaccination laws. Recently there was a worthless negro who came to our town; he was said to have come from New Franklin, Missouri, where they had the small-pox, and the report was going in less than 24 hours that our town had been quarantined against small-pox, and our people were all excited. I said to them, you gentlemen display less sense about this matter than anything I know of, and the fact that you can all be protected as surely almost as anything can be, and without expense or discomfort, and the fact that you do not take advantage of it, but at the slightest suggestion of small-pox become panicky and in fact demoralized, is certainly unaccountable. Certainly it would be the part of wisdom to be vaccinated. Certainly it is hardly credible that such a state of affairs should exist, and yet it does exist, and I suppose always will exist until we have compulsory vaccination laws. People are willing to be vaccinated if there happen to be a good number of cases of small-pox in the community or in their immediate neighborhood, but nothing else seems to convince them that it is necessary. The doctor's paper is eminently practical.

In regard to Dr. Allen's paper, I believe that his position is in the main correct. I think it is generally conceded to-day that it is necessary that we should have clinical experience in our schools; we must have the material in order to give a man clinical experience, and you can only get that in the large centers of population. But there is no question but what there are schools that are doing a good work, and doing it effectually for the first two or three years of the course; they can teach the principles of medicine, and are doing so effectually, and they deserve credit for what they are doing. But we ought not to lose sight of the fact that our students should be well grounded in the principles of medicine; that they must have this after they have the necessary preliminary training; they should be well

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grounded in the principles of medicine, and then, to cap the climax, they must have clinical instruction, and you can only get that where they have the material.

DR. T. C. BOULWARE, Butler: It seems that there is quite a difference of opinion as to the nature of the disease which is now going over the United States. Some practitioners call it small-pox and some not. I have examined a great many cases of this so-called cases of small-pox, and in my locality some of them will be very sick for perhaps two days; they will ache all over as though they were taken with grip and the second day they commence to get better and the fever leaves them and they feel well from that time on and at about the end of from the fifth to the tenth day they scab and fall off; and in some cases where the patient is not in good health or has been addicted to intemperance these come out and remain several days and the skin remains desquamative. They are not sick any more than that and there is no secondary fever, and in all the cases that I have seen — I have seen thirty or forty — there has been no desquamation of the skin around the follicles. Some of these patients do not call a physician at all; some will have ten or fifteen vesicles to break out, others several hundreds. The teaching of the text-books in small-pox is that there is a red areola around these vesicles and they umbilicate. I have never seen one of these cases umbilicate except scattered and generally then they have been bruised at these places. At Rich Hill, Missouri, they have the same disease and they have been quarantined by the State Board of Health, and in talking to the city physician he said there was a family there consisting of five or six members and the woman had had small-pox and this disease affected every member of the family. And in my practice I had one case of small-pox and after he got over it it was six or eight weeks before the discoloration disappeared. I do not think any other member of the family had it at all. It seems to me that calling this disease small-pox is a misnomer. My experience with small-pox is that when the patient has it his face becomes swollen so that he cannot open his eyes for a week or ten days and the skin becomes discolored. This is a different disease in my locality. And another thing, there is hardly any of them that go to a physician; in a week or so they are well.

DR. VAN ERMAN, Kansas City: The idea seems to be held by some that a man who has small-pox once cannot have it again. That is a mistake. The fact that one has had small-pox in the vast majority of cases will protect him against a future attack. But this is not uniformly true. One positive case on this point is worth a good many negative cases. In an epidemic of the disease in Boston, which was exceedingly fatal, about 75 or 76 cases dying, a woman had the small-pox. She had had it in her youth and was well marked and so she went out as a small-pox nurse in March at the beginning of the epidemic; she took small-pox and had it in the confluent form the second time for her. The city got the small-pox under control and the cases were so much reduced that private small-pox nurses were no longer required. But in September the pest-house in Boston burned down and the patients were again scattered. This woman,

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who had fully recovered from her second attack of small-pox in March, again went out as nurse the latter part of September and strange, to say again, she took the small-pox for the third time and died.

Now I will say that the disease which the doctor has just described is varioloid as I have seen it more than once. Now if small-pox will not protect from another attack of small-pox you would hardly expect vaccination to do any better. I believe that this disease which we had in Kansas City and other parts of the state is small-pox — it is small-pox modified by some conditions of which we know nothing; it is exceedingly mild. Just what influences have been at work to cause the epidemic to be so mild we do not know. Then there is another fact that I would like to bring out and that is that the small-pox which we had at Kansas City is almost entirely of adults while the chicken-pox is in the children.

DR. G. R. HIGHSMITH, Carrollton: Last winter we had quite an experience with small-pox in the county where I live, having a death-rate of about twenty-five per cent, and while a great many cases were of the confluent form and very bad, we had an occasional case which corresponded exactly to Dr. Boulware's description of cases he has seen; they occurred in the families where other members had the confluent form. The epidemic last winter was very malignant. Of those who had been vaccinated there were no deaths and a great many of them corresponded to Dr. Boulware's description. Many others who had been vaccinated many years ago, among them two persons who had been vaccinated as long as 68 years ago were in bed only two days; another family where they had been vaccinated 35 years ago, one was in bed two days and one four. In no case was the disease communicated where the exposure was before the third day of the eruption. It often happened that where there was a single case in a family, and others exposed, the persons who had been exposed were cleaned up and the sick person isolated and no other cases occurred in the family.

DR. T. C. BOULWARE, Butler: Was the skin red around the vesicles?

DR. G. R. HIGHSMITH, Carrollton: In some of the mild cases it was very limited, or had no redness of the skin.

DR. T. C. BOULWARE, Butler: Was there any odor after the disease?

DR. HIGHSMITH: Yes, a slight odor probably. The cases that I have seen this winter corresponded to the mildest cases that I saw last winter. The epidemic this winter has been very mild. One doctor attended seven cases of small-pox, five of them being of the confluent kind. He began to attend them on the first day of December and continued to attend them until the 8th day of January without making a diagnosis. I went to the place on the 8th day of January and there were five cases of confluent small-pox in the house. He had gone to that place every day since the first day of December and sat at the bedside of these patients an hour at a time; he would wash his hands with ordinary soap and water and go home, riding home on horseback and there remained with his family and yet did not carry the small pox to his family. There were seventy exposures from this one

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family and out of those seventy exposures about forty of them had been vaccinated. Of the seventy exposures twenty-three had small-pox; of the forty that had been vaccinated there was not a single death. My opinion is that a very short exposure to the air after being in contact with small-pox renders it very little dangerous for the physician to go to other patients. But my opinion, from the experience I had last winter and the observation of the cases we had in the epidemic this year is that the epidemic this year was a very mild one.

DR. T. C. BOULWARE, Butler: Were the vesicles unilocular or multilocular? I mean when you opened them were there more cells than one?

DR. G R. HIGHSMITH, Carrollton: I did not open them.

DR. BOULWARE: In my locality they were all one cell.

DR. HIGHSMITH: They might not have been as bad there as in my district.

DR. SHEPPE: I think this disease that we have been having in Missouri last winter is the same disease that they have had all over the United States, and wherever it has occurred there has been a difference of opinion among the local physicians as to whether it was small-pox or chicken-pox or what some called Cuban itch. In our town and county we had five hundred cases last winter. It began among the children and some mistakes of diagnosis were made in the first few cases and I think it was for the reason very largely that we expect, those of us who had never seen small-pox — expect when we are called to a case to find an absolutely typical case of small-pox; we look for all the signs and all the symptoms, and when some of them are absent, or a great many of them are absent, as they have been in this last epidemic, we naturally come to the conclusion that we have something else besides small-pox to deal with. In our place it affected rather more children than adults; we have had only one fatality, although we had a number of cases of confluent small-pox, perhaps three. There were quite a number of cases of absolutely typical small-pox. We found, also, that anything like a recent vaccination was an absolute protection against it, which I think ought to confirm the diagnosis positively. Those cases that had been vaccinated five or six or fifteen or twenty years, some of them thirty or forty years, had the preliminary fever, vomiting, headache, backache, etc., but very few had the eruption. Another thing that we noticed was, that while the text-books say that small-pox is contagious in all stages we never observed a single case of incubation before the period of the eruption. There were cases where the friends visited the sick person early in the case before the eruption and did not take the disease, and on those cases which were exposed where we vaccinated them early it protected them almost absolute. I think I recall only one case which took the disease before the stage of eruption and that was an exceedingly mild case.

DR. ADEON, of Gilmore: Since we cannot agree on the nature of this disease, I arise for the purpose of asking this question: Are there no satisfactory symptoms by which we can determine any pathologic process that is going on in the human system? and if not, how do we know diseases

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when we are dealing with them? If there are no peculiar ear-marks by which small-pox can be distinguished from the other pathologic conditions, how do we know when we have a case of small-pox? Cannot we tell whether we have pneumonia, typhoid-fever, erysipelas, scarlatina or any of those diseases; is there not, I say, a specific symptom or symptoms by which we make our diagnosis? If not, we are powerless to make a diagnosis. As to the paper of Dr. Allen, I think we make a mistake sometimes in assuming that a student can get his clinical information and experience only at the college. I think oftentimes a student can remain in his own town or village with some physician and get as much clinical experience as he will at a college.

DR. JAMES: There has been a great difference of opinion among the brethren in Missouri as to whether they have had small-pox to contend with or not. Being a member of the State Board of Health I have been forced to come in contact with a great many cases of small-pox or disease claimed to be small-pox in the last three or four months. In the western portion of the State of Missouri I found there had been six or seven hundred cases under observation. The expected symptoms do not perhaps manifest themselves and the State Board of Health is called in and compelled to investigate the case. And it may not be small-pox at all. Then the reverse is also true. I have in several localities seen small-pox called chicken-pox and Cuban itch. Now, so far as Cuban itch is concerned I never have been able to get anyone to give me any literature on Cuban itch. They call it Cuban itch because they have no other name for it. They say the world at large has been greatly benefited by this illustrious Jenner; that by the medium of vaccination the world has been more or less immunized and that during the last two or three years small-pox has been found in the mildest form of small-pox or varioloid where the patient had been vaccinated properly. But I have found that a great many times the vaccination is very imperfectly done; often the doctor does not do it properly or does not give the patient proper instructions and while they will have a sore and a bad arm the result is not such as it should be; so that a good many people go around feeling that they are immunized when they are not. I have found in cases of that kind, true confluent small-pox. Some of these cases were claimed to be chicken-pox. I know of one man in the pest-house in Kansas City that I took off a railroad train up there that came directly from the home of a family suffering from "chicken-pox." I was called a few days ago to see a doctor friend who sent for me. He is a gentleman who was a little bit harsh with those differing with him as to his diagnosis in five different cases in his town; he said it was nothing but chicken-pox and he was absolutely certain about it. I was called to see him the other day and found him down with confluent small-pox and he had taken it from his case of chicken-pox. He is simply a sufferer of his mistake.

DR. C. H. WALLACE, St. Joseph: I want to criticise Dr. Allen's paper in that I think it did not go far enough — it is not far-reaching enough; if the doctor had said that neither St. Joseph nor Kansas City nor St. Louis

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nor any other town in the State is big enough for a corporate medical college I would say, amen. I will say that St. Louis is not big enough for a medical college, neither is Kansas City and that if the medical schools were confined to the universities where the temptation to commercialism is not present I think the condition of things would be very much improved.

DR. R. E. YOUNG, Jefferson City: It was my good fortune or ill fortune to strike an epidemic of small-pox and to have charge of a pest-house with 38 or 40 patients, in my early days of practice, and I know of no disease that is more easily diagnosed than small-pox. What troubles a great many men is that they are alarmed about a case that is thought to be small-pox for fear it will ruin their other practice, another thing is that the people are alarmed about it and they do not want to alarm the people. Now I wish to say, that it is a disease that more nearly follows the rule of definite incubation than any other disease that I know. If the patient has been exposed to small-pox infection within fourteen days, you may look out for small-pox; then again the fever in small-pox is a peculiar one. It is very high and the pain is in the head and back, which is characteristic of the disease. The eruption appears about the third day, but prior to that if you have watched your case you can feel under the skin a fine shotted condition as if there were fine shot under the skin. This is before you see the eruption; by running your hand over the forehead you can discover this shotted feeling. On the third day the eruption appears and it is hard and has a hard base. It always has a hard base and if I see an eruption that has no hard base, I do not care how much it looks like small-pox, I do not call it small-pox. The eruption always has this hard base. Then during the first day of the eruption the serum appears in the top part of the eruption and this begins to pit. Now the fever subsides; that is a very important point in the diagnosis. Before this the fever has been high, 103 or 104. But on the next day or the day after comes the fever with the eruption; then the pus appears and I do not care whether you have one vesicle or whether you have the whole body covered with vesicles, the rule is the same. This fever of the eruption, if it is variola, goes on and breaks up in a scab. If it is varioloid the fever of the eruption is so light that it can hardly be detected.

DR. J. D. GRIFFITH, Kansas City: Last winter during this epidemic that we were having in our State a committee was appointed consisting of several of us and sent to the pest-house at Kansas City when the Cuban itch became prevalent, according to the papers, and Dr. Halley was chairman of the committee; I was one of the members, and we examined 127 cases, I believe, or in that neighborhood; whether it was small-pox or not, I am sure I thought so. I do not think there was any itch about it. I do not think there is any doubt in the world about it. The eruption in the mouth was very prominent in the majority of these cases.

DR. THATCHER: In regard to Dr. Kelso's paper in this discussion there has been no mention of the treatment, but I want to disagree with the

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essayist in regard to the statement that scarcely anything can be done. If the theory in regard to the cause of this trouble is of any value or if the modern views of the contagious diseases is worth anything, I believe that we have remedies that are of value in the treatment of this affection be it small-pox, varioloid, chicken-pox or Cuban itch. If I had a case like the gentlemen have described here, I would not hesitate to use some bacteric ide, preferably the bichloride one or two per cent solution, or stronger if necessary. I would use something in the form of powder, associated with vaselin or something of that kind, to allay the irritation. I use two per cent solution of bichloride in scarlet fever. I find washing the patient morning and evening often shortens the period of fever and also the desquamation, and I would not hesitate to use some bactericide in the treatment of these affections and internally the sulphide of calcium.

DR. SHATTINGER, of St. Louis: There has been such a vigorous eruption of small-pox this morning that I am afraid Dr. Allen's very valuable paper will not get to the stage of efflorescence, and I want to see what I can do to bring out that medical eruption. The differential diagnosis of small-pox is, of course, a subject of great practical interest to us medical men and of great importance to the public, but I believe that the subject touched upon by Dr. Allen is of still greater interest to us as a profession; it is something more than pertains merely to the scientific status of our profession. This question of medical education is gradually becoming one of very great importance and it behooves every one of us to pay special attention to it. The doctor touches the key-note as to what is most demanded in the matter of medical education. We must demand ample facilities and methods for the teaching of every branch of medicine by objective methods. It has been said, "Do not believe what you cannot see," and this dictum, although a little dogmatic, may be applied, not only to clinical teaching, but to every branch of medical study. You cannot teach the fundamental branches of medicine today without the most adequate laboratory facilities, and you cannot do that with large classes. I would make this practical suggestion at this point, that when you recommend a college, see how many students they graduate! you will not go far wrong in withholding your recommendation from the school with an immense graduating class. That is a very practical application that I would make. It takes time to teach these branches by objective methods; you cannot make a physiologic demonstration in less than an hour and if you have two hundred students to teach, you cannot teach them that way. And the students must be taught not to believe things. I believe that the first principle of medical education is skepticism. He must take nothing on authority, I do not care whether it is in physiology, bacteriology or whatever branch it is, he must not believe a statement until it is proved to him and he can only do this by seeing the phenomenon that is mentioned before his eyes. And the same will hold good in clinical teaching. I will ask the gentlemen who sat in the back seats in the amphitheater in days gone by, how much you learned about a surgical operation which was being performed before a class of 150 students? You have got to be right

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there where you can see the method and steps of the operation, and that can only be done in small classes. What we need in our profession is a broadgauge plan of education; we have got to be something more than doctors nowadays; we will have to become all-around scientists. Then you will see reappear in the medical arena true surgeons instead of appendectomists. One way in which I think we can accomplish what we desire is by a uniform system of requirement for graduation and that can only be obtained by State means. I do not care how many colleges you have; if you have a uniform system of requiring throughout the State certain qualifications in order to entitle the student to graduate, you will oblige the college to elevate itself to the requisite standard. I hope, gentlemen, that you will exert yourselves and use all the influence you have in your community and with your colleagues to bring this state about as fast as you can.

DR. KELSO: I have been in quite a number of epidemics of small-pox. I saw one in Chicago; I spent a winter there at a medical college and they had the small-pox there and I saw some of the cases. Many died; they had the confluent form as well as the milder forms. Now the epidemic we have been having is rather milder. I do not know why, but I think, as a gentleman who is not a physician said to me, that perhaps we may inherit immunity to a certain extent by reason of vaccination. Why could that not be the case? I don't know why it should not. If a parent — the mother is vaccinated shortly before her child is born I don't see why that child should not to a certain extent be immune. Of course not entirely immune but to a certain extent. In regard to the diagnosis I tried to make that as plain as I could. That is a matter of the greatest importance because we do not want to permit the disease to spread all over the country. You may not find all the symptoms present, but by the third day you will find the beginning of the eruption and this will go from the size of a mosquito bite until it gets to be a considerable pustule and it takes eight or ten days. That is not so in chicken-pox. There is a different history. Of course there is something to be said in favor of compulsory vaccination. I am in favor of it if it were possible. I believe they do have it in some European countries and I understand that there is then hardly a death from the disease.

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ADDRESS ON THE PROGRESS OF SURGERY.

By W. A. McCandless, St. Louis.

I shall not attempt to skirt the whole field of surgery from the time of Galen to the present era, but would respectfully call the attention of the society to a few subjects of general interest to the whole profession.

First let me invite your attention to an old but ever new subject.

FRACTURES IN AND ABOUT THE ELBOW JOINT

are among the most trying which the surgeon is called to encounter, on account of the possible impairment of motion or deformity which may ensue. The joint is formed by three bones — humerus, radius and ulna — and the displacement of the articular end of any one of these is enough to cause deformity or imperfect motion.

The most common fractures about this juncture are through the external and internal condyles. Sometimes the fracture occurs between the condyles (inter-condyloid), or above the condyles (supra-condyloid); then we have fracture of the olecranon process, and occasionally through the neck of the radius. Most of these invade the joint, and may be responsible for bad functional results. Fractures of the external condyle cut off the capitellum and may interfere either with the rotation of the radius or its flexion. A fractured portion of the internal condyle usually encroaches upon that portion of the trochlear surface occupied by the olecranon. It may be pushed upward, giving the arm a gun-stock appearance, or forward or backwards, interfering with the flexion or extension of the arm.

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When there is no displacement or tendency to displacement any comfortable splint may be used. But whatever may be the nature of the fracture, the great desideratum is to avoid a stiff joint. The usual text-book advice, and that which is commonly recommended by teachers in the treatment of elbow fractures, is after the reduction to place the forearm at a right angle, rotate it upon its axis, and apply a suitable splint, so that if the joint is stiff it will be in the most serviceable position. I hold that this position is responsible for many deformities, and the roller plaster-of-paris bandage for many more. Equally so, any unmovable splint tightly molded to the arm and held by any bandage for too long a time — and too long a time may mean a few hours or one week or four weeks — may result in stiffness or deformity. No splint should be applied tightly to the arm; especially is this true until all possibility of increased swelling has disappeared, and not then; for, whenever there is swelling, the swelling itself lowers the vitality of the part, and the utmost freedom compatible with rest should be enjoined.

I advocate almost a straight position, only slightly flexed, to remove strain or a feeling of restraint, and the hand turned upon its axis not more than 30°, for the following reasons: You can then see and feel the relative positions of the parts, that the condyles are in the proper relation to the olecranon and to each other, and you can mold them into position if they are out. With the arm fixed you can do neither; with the arm straight you can put displaced fragments into position, and apply anterior and posterior splints of some soft or flexible material that will hold and not strangle the parts. You cannot safely apply any form of anterior splint to a flexed arm; there is no room to fit it, and without it you cannot hold forward displacements in position. There is not room in the flexure of the elbow for the thickness of your finger. With the arm flexed you cannot apply a splint, and to apply a splint and then flex the arm insures a degree of pressure that must interfere with

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the circulation and perhaps cause superficial necrosis or profound atrophy.

Two cases within a very short time have come under my observation and care; one a boy of 9, the other 12 years of age, both with stiff elbows. Both were treated with the arm flexed at a right angle, and with a plaster of paris splint that enveloped the entire circumference of the arm. The splints were allowed to remain on about four weeks or a little less; the younger had but little pain, but when the splint was removed the arm could not be extended or flexed beyond the right angle, the angle at which it was treated, and it was easily seen that the external condyle had been broken and pushed forward, interfering with the movement of the radius. The other patient suffered greatly from the splint pressure. The hand was swollen, and when the splint was cut open opposite the elbow, but not the entire length of the splint, some blebs were observed, and were thought to be caused by the original injury, and not from interference of the circulation caused by the splint. The splint was removed about the fourth week; the elbow was stiff, fingers contracted, and flexor muscles very much atrophied.

At this time and with this history this patient came to me for treatment. Thinking possibly that the musculo-spiral nerve might be entangled in the inflammatory mass and cause the muscular disturbances and contractions, I dissected it up freely and saw that it was loose and not in the least implicated. This condition, then, is easily explained. The ischemia or arrest of blood supply had caused the atrophy of the bellies of the muscles and a substitution of connective tissue, a scar or a sclerosis for muscular fiber, for which probably there is no remedy.

In concluding this special subject I would advise in treating fractures of the elbow joint that the arm be not originally placed in the fixed position; that the splint should not encompass its entire circumference; that it be frequently examined and removed as the symptoms may require, believ-

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ing that stiff joints are frequently the result of imperfectly adjusted fragments and too much bandaging.

IN FRACTURE OF THE PATELLA

the bone may be broken in two distinct ways: by muscular action or by direct violence. By direct violence the bones may be broken into two or more pieces and in any direction, but there is scarcely ever any rupture of its envelopes, the thick super-imposed fibrous structures remaining intact. The usual posterior splint with strong adhesive strips is generally all that is required to effect a satisfactory coaptation. But quite the contrary condition exists when a fracture is produced by violent muscular contraction. The fracture is usually transverse. Its envelopes are torn asunder and a wide separation exists between the pieces of bone. The fibrous aponeurosis is torn across, folded over and interposed between the broken ends of the bone, and no matter what kind of splint or appliance is used in the treatment of this injury a fibrous union invariably follows. The separation may be slight when the splint is first removed, but greatly increases until it may reach several inches, and a wide separation decidedly impairs the strength of the limb and interferes to a degree with locomotion.

A few years ago a great furor was created in this country and in Great Britain over the brilliant results obtained by wiring the fragments together, but a storm of opposition began to gather until now the operation is hardly ever recommended and scarcely ever practiced.

To eliminate the two difficulties, the separation of the fragments and the infolding of the soft structures, the most rational substitute for drilling and wiring, to my mind, is to open the joint over the normal site of the patella, evacuate the capsule, which is nearly always distended with blood (which might prove a serious complication), evert the soft structures that have been turned over the ends of the fragments, and carefully suture their borders together with properly pre-

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pared material; also repair in the same manner torn parts of the capsule and aponeurosis or expanded tendons of the muscles. After bringing the remaining soft parts together apply a posterior splint. In so doing you have completed one of the best operations in bone surgery, and in the hands of those competent to do general surgery I see no reason why it should not be undertaken, and in view of the many other failures I wish but to commend this procedure, for in my personal experience it has been signally successful.

In treating

FRACTURES ABOUT THE KNEE, LEG AND ANKLE,

I would advise that extreme extensions be avoided; that the leg be slightly flexed upon the thigh. By so doing the pull of the gastrocnemius is relieved and the lower end of the broken femur will readily fall into position. This rule certainly applies to fracture about the ankle, for if the leg is extended so must be the foot, and if kept in that position until the bone repairs, when the patient attempts to walk his extended foot and toes will catch upon objects in his way and occasion great inconvenience; and there is not one in the hearing of my voice but has observed this in his own practice.

The rigidity of the joint will be painful in locomotion until the joint readily acquires a right angle to the leg. This often means a prolonged convalescence. All this can be avoided by flexing the leg upon the thigh and the foot upon the leg at the time the plaster splint is applied. The principle of the old double inclined splint has lost nothing of its merits notwithstanding the splint has fallen into disuse.

A newer topic, yet not one of more interest, is

ABSCESS OF THE LUNG.

Abscess of the lung is a collection of pus inside of what might be termed the capsule of the lung. The abscess may be single and small, or large and diffuse, or abscesses may be scattered generally throughout the lung. The character of an

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abscess depends upon its origin and the whole treatment is modified by the source of the local disturbance. Within the last ten or fifteen years abscess of the lung has become a surgical disease, and we will discuss briefly its pathology and give some of the methods of applying surgical relief.

Here, as elsewhere, the local suppuration has been the result of an infection from some source. Pus does not follow every inflammation, for inflammation may terminate in resolution, in death of the part, or in suppuration. Under the head of the causes of pulmonary abscess may be grouped a large class; notably and first, tubercular, then slowly resolving pneumonia. The abscess may result from a septic embolus derived from a suppurating wound elsewhere, from puerperal septicemia, from an endocarditis, from a gunshot wound, from the pressure of a foreign body, from a dissolving gangrene and, secondarily, by the extension of a hepatic abscess or by the infraction and extension of a pleuritic one. Abscess of the lung proper should include only those having their origin in the parenchyma of the lung.

It is important that a clear diagnosis be made before an operation be contemplated, for there are certain conditions where an operation would be useless and fruitless. For instance, where multiple or disseminated tuberculosis abscess exists, nothing good can follow any surgical attempt; when the patient is suffering from pyemia and abscesses are liable to appear at any point or place; when the abscess has opened into the bronchial tubes, and its contents are being expectorated; when the gangrene of the lung is diffuse, that is, when it has involved a large portion of the lung substance, but there remain other conditions that demand surgical interference; when the abscess is single, whether its origin is from chronic pneumonia, whether tubercular, whether from circumscribed or limited gangrene, or from septic infarction, or from embolism.

Having determined from the history of the case the physical signs and symptomatology, and perhaps by the use of an ex-

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ploring needle that an operation is required, how shall we proceed? That which first concerns the surgeon is the treatment of the pleura. An open pleural sac contaminated by the escaping pus from a primary discharging pulmonary abscess may become a pus sac itself, and the dangers of an inflamed pleura are greater than ordinarily expressed or understood. In ordinary empyema the lung may be compressed by the accumulated fluid in the pleural cavity, and in chronic empyema we find it crowded up against the backbone, reduced, perhaps, to one third its natural size, with no power to regain its normal proportions when the fluid is withdrawn. Why is this? Is it from fluid pressure or from the inflamed and ultimately contracted cicatricial pleura itself and the plastic material and fibrous bands that hold it down? The truthfulness of the latter view has been demonstrated by removing all possible adhesions and bands and observing the lung expand, and the amount of expansion will depend to a degree upon the amount of relief afforded.

Long before the publication of the experiments of De Lorme, advocating the radical measure of dissecting off the adherent pleura, it had been observed that after a Schede-Eslander operation for closing the cavity caused by a chronic empyema, that when the thickened pleura and broad fibrous bands that held the lung were cut away, not with the original idea of extricating the lung from its pathological tangle, but to remove adventitious matter and the nidus for infective bacteria, that the lung did expand and its offices were renewed. The analogy of this is so common and well-known in connection with adhesion elsewhere, notably about the gall-bladder, that it is a surprise that it was not recognized before.

There are interstitial changes in the parenchyma and these are not overcome by the pressure release of the lung; but the fact remains that the inflamed pleura, aside from the effusion, has something to do with imperiling the function of the lung. Then what shall we do to save the pleura?

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Sometimes nature has provided adhesions and the abscess can be evacuated without infecting the pleura; but if no adhesions exist, what is the best way to form them? Nearly all writers advise sewing the two pleural surfaces together. From personal experience I do not believe this is practicable, and, to do it well, impossible. I find it hard in the first place to remove the healthy costal layer from its attachment without tearing it. If it is not healthy it is already adherent, and no stitching or other means are required to effect the union. It is thin and friable, and the movement of the lung in respiration either pulls the stitches loose from the costal or pulmonic layer. There is generally time enough to effect this union by other means, and that commonly adopted is, having resected the rib, to apply some irritating and stimulating agent to the exposed surface, or better, by first cutting through the costal layer, pack the wound with gauze until adhesions are made fast.

The two soon unite and you can proceed with the operation. The operation usually consists in resecting the rib and cutting or burning through the soft parts, evacuating the pus without washing or slushing out the cavity, introducing very carefully a drain.

A tubercular abscess is most frequently formed near the apex of the lung, and if there is any indication of circumscription it should be drained, perhaps curetted and packed. The adhesions between the pleura are nearly always strong. We attack tubercular abscesses at every other place. In skin and bone and muscle drain the peritoneal and arachnoid cavities, and why not the lung? Already a large number of successful cases of incision of tubercular cavities have been reported. Abscess after pneumonia and embolic abscess are usually situated at the base of the lung. The ordinary text-book instructions are to enter the chest wall back at the most dependent point so as to favor gravitation. This is all wrong. The place to reach the abscess is at the point where it seems to be nearest the surface and where the adhe-

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sions are most secure; where the flatness is most marked; where the vocal fremitus is absent; where there is no vesicular murmur; in other words, where the physical signs point directly to its existence.

We will dismiss this subject, feeling glad that so much is being accomplished in this special field of work.

A review of the progress in surgery would not be complete without referring to the great advancement made in the

TREATMENT OF PELVIC INFLAMMATION AND ECTOPIC PREGNANCY.

Pelvic inflammation may and does arise commonly from three distinct causes: gonorrheal, septic or tubercular infection. It was for a long time the custom to remove the tube and ovaries for almost any condition associated with pain. A hydro-salpinx, a cystic ovary or inflamed tube all suffered the same fate. Crowding upon this brilliant surgery, when hundreds of operations were reported without death, came the stories of worse than death, unyielding neuroses; no thought was given to the possible conservative treatment of a little hydro-salpinx, an ovary with a small retention cyst, or a tube with no possible signs of disease other than catarrhal inflammation; but the time has come for differentiation and only sacrifice will be made of organs which imperil life or can add nothing more to its comfort.

The track of gonorrheal inflammation is well understood; it passes from the vagina to the uterus and on to the tubes. The infection that follows an incomplete pregnancy or the puerperal state finds its way through the uterine walls by means of the lymph channels. In gonorrhea we may have acute or chronic purulent salpingitis. In septic inflammation we may have pelvic abscess or the infection may be arrested at an earlier period and never attain the dignity of an abscess. Notwithstanding the clinical facts connected with a case, we are sometimes unable to make a differential diagnosis until an exploratory operation is made, and this I now believe can be

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made more safely and satisfactory in many cases through the cul de sac than through the abdominal walls.

Among the difficulties and dangers to be met, whether the operator proceeds from above or below, are adhesions between the intestines and the inflamed organs. General peritonitis from extravasated pus or from the abscess focus, which cannot be satisfactorily removed or drained. The question forces itself upon us: should every pus tube be doomed without first giving it the benefits of conservative treatment? I see no more reason, theoretically or practically, why a recently inflamed tube should be cut out than an eye should be plucked out that is affected with gonorrheal ophthalmia, or that a knee should be resected that is affected with gonorrheal arthritis, or that a penis should be cut off because of a gonorrheal urethritis.

The tube sometimes discharges its contents into and through the uterus and, with a thoroughly curetted and cleansed uterus, the tube often recovers. But suppose it remains occluded and distended with pus beyond a certain period, it then assumes the form of a chronic suppurated salpingitis. I believe the time is at hand to admit that often these tubes can be saved by evacuating them and treating them through the vaginal incision. An abdominal section means the possible separation of intestinal adhesions, the removal of the tubes and usually the ovary, the preservation of some part of which is a matter eliciting a great deal of discussion at the present time. Through the vaginal section no adhesions are disturbed. With a blunt instrument the tube is opened and discharged, and after packing is left alone either to recover its function or to become obliterated. The ovary is not disturbed, the intestines exposed to less danger and the drainage complete. This method of dealing with a pus tube I recognize is open to much discussion, but the novelty of the operation is passed. We have only to await the results of a larger experience.

In pelvic abscess the consequence of sepsis acquired during the puerperal state, there is to my mind but one satisfactory

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and scientific operation, and that is through the vaginal route. The abscess is near and drainage is complete. From above a long distance must be encompassed. Perhaps and usually intestinal adhesions are encountered, and then what are we to do with the pus and the pus cavity? To drain it thoroughly uphill is impossible. In drainage there are but two factors; gravitation and the possible contributing influence of the movements of the contained or surrounding viscera. In empyema we choose the most dependent point to make an opening through the chest wall, and if the lung is still active and resilient it forces the pus out in gushes. To a limited extent we witness the same phenomena in treating abdominal abscesses.

But neither gravitation nor any other contributing forces drain a pelvic abscess through an abdominal incision.

The glass drainage tube, or some other, must be used, for from the very nature of this abscess you cannot cut it out. It has no sac of its own, as we find in the pus tube. Any material used for a drain serves the purpose of establishing a sinus. For quickly delicate adhesions are formed about it, and the sinus is finally converted into a fibrous tube. The abscess and sinus may disappear sometimes, and a fecal fistula may come and go with them, but all may remain indefinitely, and the inter-intestinal as well as other visceral adhesions that succeed this method of treating septic inflammation are a menace to the health and comfort of the patient. A sinus is only a well that overflows when it gets too full. Uphill drainage is necessarily imperfect. There is but one avenue of approach to these abscesses, and that is through the vagina, by free incision. We would certainly condemn the aspirating needle, the trocar, or pointed scissors, except as diagnostic agents. The safety, comfort and relief of his patient moves the operator to accept this route.

A few words upon the subject of extra uterine pregnancy Ectopic pregnancy is due to the arrest of the impregnated ovum at some place along the course of the tube. The fetus grows and either expands the tube to accommodate its new

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dimensions, or ruptures its walls; generally it perishes, but sometimes it survives. Rupture of the tube is apt to occur between the fourth and ninth week, and the amount of hemorrhage depends upon the size of the blood vessel that is torn. If one of the smaller, there will only be an oozing, if the ovarian, hemorrhage may be so great that death will occur before any relief can be afforded. Happily this seldom occurs. We do have repeated attacks of hemorrhage. This occurs when the tube is gradually expanded or giving way, and the small vessels that are circulating in its coats yield one after another. This hemorrhage is seldom fatal. In fact it is rare that the patient dies from active hemorrhage. The hemorrhage may go on interruptedly for several weeks, and even the usual signs of parturition may be exhibited. Especially is this noticeable in connection with the escape of the decidua vera. What comes of the fetus? It usually perishes early in its history, and always so unless artificially delivered.

As we have before remarked, it may survive and grow in an expanded tube or escape into the abdominal cavity and continue its development, but it passes through a perilous history up to the fifth month, and at no time is it free from danger. It may perish in the tube or in the broad ligament in the peritoneal cavity. With a ruptured tube, what comes of the blood? It may be so freely discharged into the peritoneal cavity that the patient will only survive a short time. This, however, is the exception to the rule. Few patients die from the first hemorrhage; few die from the second hemorrhage; in fact, they may never die from hemorrhage as an immediate cause. After a number of days the blood becomes walled off by adhesions, seeks the most dependent point and occupies the pelvis; or it may be intra-ligamentous. Here a new danger comes to the patient of a possible infection of the clot.

If discovered early in its history before rupture has occurred, celiotomy and enucleation, ligature of vessels and removal of everything pertaining to the fetus constitute the proper treatment. If rupture has occurred and hemorrhage

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is so free that death is imminent, celiotomy and ligature of vessels and removal of sac and contents should be employed; if rupture has occurred and the fetus survive, celiotomy at such a time is most favorable to save the life of the mother. However, that which particularly interests the writer is that a large percentage of these cases where early rupture has occurred (and these comprise a large percentage of all cases), the contents of the ruptured sac and blood have become encapsulated by adhesions of more or less density, and by the natural laws of gravitation occupy the pouch of Douglas and are easily reached through the vagina.

The advantages of vaginal section are the greatly lessened danger of infection; the peritoneal cavity is not opened; neither tubes nor ovaries are sacrificed, and frequently the wound closes in a week or ten days without temperature or pus. The only possible element of danger is the recurring hemorrhage. When the sac is opened anticipating this, lest the bleeding vessel might not be easily secured, preparations should always be made ready beforehand for a laparotomy. In all of the cases reported where this accident has occurred it was the result of too radical a cleaning out of the sac, tearing loose the clots and breaking up the adhesions. I see in this operation the possible saving of many lives.

I will state in concluding my paper, Mr. President, that I have discussed no subject with which I have not had some personal experience, however small, and I believe what I teach.

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WHAT IS THE VALUE OF TRAUMA AS AN ETIOLOGIC FACTOR IN TUBERCULOSIS OF BONES AND JOINTS?

GEO. R. HIGHSMITH, CARROLLTON.

During the last two decades discoveries have been so rapid that it is difficult for teachers of surgery to adjust themselves to the new order of things. We are disposed to cling to old theories and to cherish the traditions of our fathers, and often in the face of actual demonstration are loth to give up preconceived opinions. Reverence for the opinions of teachers and those who have been hitherto regarded as authority is a part of our nature as well as of our education.

Those who formed their opinions previously to 1883 — before the tubercular bacillus was satisfactorily demonstrated to be almost always present in every case of chronic bone disease — lay considerable stress upon trauma as a causative agent. If no history of injury could be elicited the trauma was supposed to have been overlooked or forgotten.

Later writers and teachers have not been disposed to mark out an entirely new path. No one has undertaken to write anew the entire pathology, which is necessary to conform to our present knowledge of morbid processes as demonstrated through the agency of microbes.

The above observations are offered for the purpose of accounting for the lack of positive statements by recent authors as to the pathology and etiology of chronic tubercular bone disease, as well as of some other conditions, and for the seeming uncertainty as to the value of trauma as an etiologic factor, as expressed in some of the recent text-books.

A pretty thorough investigation of recent literature, to my mind, establishes the proposition, that, according to the

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weight of authority, trauma is seldom even an exciting factor in the etiology of chronic bone disease.

I take the liberty of quoting some statements from recent authors in support of the proposition: —

Dr. Nicholas Senn, page 165, "Tuberculosis of Bones and Joints," says: "In brief, the etiology of bone and joint disease may be summarized to the effect that the essential cause consists in the presence of tubercular bacilli, in sufficient number, in the soft structures of the joint, to enable them to exercise their specific pathogenic properties upon tissues predisposed to infection by hereditary or acquired causes."

On page 94, he says: "It is also possible that, in many cases, at least, the attention of the patient or his friends is first called to an existing tubercular focus by the immediate effects of an injury, the latter having had no influence in the cause of the disease. Every child large enough to run about injures himself more or less daily, yet tuberculosis of bones and joints follows in comparatively few cases; and in such cases the essential cause must be present at the time the injury was received."

On page 394, speaking of Pott's disease — called also spondylitis — he says: "A vast clinical experience carefully observed by many competent surgeons, the co-existence of tubercular affections in other organs, the bacteriological examination of the contents of abscesses starting from diseased vertebrae, as well as numerous post-mortem examinations, have established the fact, that, with few exceptions, all cases of chronic spondylitis are of tubercular origin and nature. The etiological relation of trauma to tubercular spondylitis is the same as to tubercular affections in other bones. The presence of tubercular bacilli in other organs or in the circulating blood is the essential cause, and the trauma can be regarded at best only in the light of an exciting cause. Almost every child in ordinary health falls hundreds of times before it reaches the age of puberty, and yet tubercular spondylitis only occurs in a comparatively small percentage. It

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is true that the actual development of the disease follows soon after an injury, but in many cases there can be no doubt that the ubercular focus was present at the time, and the trauma only aggravated the local conditions. If the trauma '—mark the subjective—' bear a more direct causative relation to the development of the disease, we must take it for granted that the tissue-lesion caused by it serves the purpose of a locus minor is resistentiae, in which the tubercle bacilli become arrested and find a favorable soil for their growth and reproduction." Senn continues: "The spinal column is so well protected that slight injuries produce no palpable tissue-lesions, and if they were severe enough to produce contusion or infraction of the bodies of the vertebrae a tubercular spondylitis could not be produced unless the injured person furnished the essential cause—the bacilli of tuberculosis."

Dr. V. P. Gibney of New York, Superintendent of the Hospital for the Ruptured and Crippled, and who sees more cases of chronic bone and joint disease, perhaps, than any other surgeon in the world, in "Dennis' System of Surgery," page 268, says: "The old theory of trauma as a cause of chronic bone and joint disease, in children at least, ought to be abandoned. While one may by diligent search, find individual cases which would appear to depend upon trauma, the rule is just the reverse. It cannot be too strongly impressed, both upon the surgeon and the laymen, that there is great danger consequent upon falls and injuries of various kinds after the disease has appeared."

Dr. Dennis of New York, editor of Dennis' System of Surgery, in a paper read before the New York Medical Association, says: "Traumatism alone will not develop tubercular joint disease."

Dr. G. H. Taylor of New York, says: "Instances are exceedingly rare in which the memory or actual knowledge is able to connect angular curvature with local injury in the relation of cause and effect."

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Dr. Roswell Park of Buffalo, in a paper read before the Buffalo Medical Society, says: "The pernicious doctrine of traumatic origin of chronic joint disease has unduly influenced the average professional mind, in which a pathological problem was never harbored, and, as a consequence, the effects of the general constitutional condition — the tubercular diathesis — is overlooked." The American Text Book of Surgery, under the head, Pott's Disease — Spondylitis — Cause — says: Tubercular inflammation of the body of the vertebrae is a disease usually found in childhood, affecting more frequently delicate children between the ages of three and ten years, of poor parents, especially those of tubercular families. No age or class is exempt, however, and occasionally no family history or struma can be elicited. Usually the affection is ascribed to some slight traumatism; it may be the exciting cause in many instances, but tubercular diathesis or soil is essential to the production of the typical disease."

In Wyeth's Text Book of Surgery, edition of 1887, the very emphatic statement is made that traumatism is an essential element in the production of chronic bone and joint disease. To show the trend of opinion, in his edition of 1899 he says that trauma is seldom an etiological factor.

When the pathology and etiology of chronic bone and joint disease was first written, if the nature of morbid processes as demonstrated through the agency of microbes had been known, in my opinion, trauma would not have been thought of as a probable etiological factor, at least would not have been accorded greater influence than other depressing agencies.

Even before the discovery of the tubercular bacillus, occasionally an author expressed doubt as to the agency of trauma as an etiological factor.

Treves of London, in 1881, after giving the prevalent opinion as to the causative relation of trauma, says: "Any inquirer who starts with a bias in favor of injury as an essential cause of Pott's disease will not lack material to sup-

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port his opinion. The only question is as to the value of that material. Of how many children at the age of ten may it be said that 'so many months ago it fell and hurt its back' or 'had a bad trouble,' or 'had something to strike it on the back?' Those who maintain the importance of injury in this disease must bear the onus of explaining why this disease is not more common than it is, and why a given injury will produce the malady in one child, while it has no permanent effect upon another. In scrofulous children, in children already predisposed to hereditary or acquired defects, to certain phases of chronic inflammation, it is easy to understand that a slight lesion may excite a curious action in a vertebrae. Whether such a lesion is essential or not it is difficult to say and still more difficult to prove. There is the further question as to whether this lesion must of necessity be an 'injury' in the usual meaning of the word, or whether it may not be caused by an undue use of the part, by disproportion between the strength of the column and the weight it maintains, or undue pressure exercised upon some special part of the vertebral segments.

Lastly, if traumatism were so essential a feature in Pott's disease, it would not be unreasonable to expect some definite relation should exist, other things being equal, between the injury and consequent disease. But no such relation exists. A severe, extensive and acute form of spinal caries may occur with the absence of a history of any definite injury, while, on the other hand, a severe injury to the back may be attended by no other results than those immediately connected with the accident. Considered generally, the etiology of Pott's malady bears a striking resemblance to the etiology of white swelling or strumous joint disease, and there is almost complete identity between the various opinions that have been advanced as to the cause of the two complaints."

Dr. Samuel Gross expressed the same opinion in an edition of his surgery published I think, in 1881. All of which goes to show that the foremost men in the profession had begun

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to doubt the agency of trauma as a causative factor even before we were able to demonstrate that the tubercle bacillus is always present; and even before the discovery of micro-organisms as an etiologic factor in nearly all morbid processes.

Another thing about which there is a certain amount of uncertainty, even in the works of those authors who are disposed to recognize the influence of trauma, is the absence of anything like a positive statement as to the length of time which may elapse between the reception of an injury and the onset of active symptoms. The medico-legal aspect of this question, it seems to me, is an important one. I have in mind a case in which a suit for damages for alleged personal injury to the spine resulting in Pott's disease was begun three years after an alleged accident. The railroad had no record of any accident having occurred, and the plaintiff went on attending to her business and social and domestic duties, became pregnant and was delivered of a healthy child about a year after the alleged accident — pregnancy and labor normal. No complaint was made for two and a half years and no physician was consulted until about that time. No diagnosis was made until about three years when an angular curvature appeared. The accident was then recalled and suit begun.

The fact of the absence of anything like a definite statement by most authors as to the time in which the disease is expected to develop after an injury was seized upon by the attorneys for the plaintiff as a pretext for associating the diseased condition of the vertebrae with an alleged accident of three years ago.

It is to be regretted that those who allege injury as a causative factor do not state positively a limit within which the symptoms should appear. I have made diligent search among authorities and must say, while most authors are silent as to the time, I can find no authority, expressed or implied, for ascribing the disease to an accident which occurred as long as a year before active symptoms were manifest.

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Wyeth says the time may be within three or four weeks, or several months may elapse. Gross says that the disease may be apparent within three or four weeks, and that not longer than five months should elapse from the time of the accident before destructive bone lesion is apparent.

I have tried to be unprejudiced in my investigations; and looking at the matter in the best light I can obtain from reading and what is shed upon the subject from personal experience, I am free to confess that the more I investigate the more skeptical I become as to the influence of trauma as a causative agent. I would not advise a patient suffering from chronic bone disease that it was the result of an injury, unless there was a sequence of symptoms conclusively connecting the trouble with the accident.

I have looked up more than forty cases of chronic bone disease which have come under my observation during a practice of more than twenty-five years in the country, and which I have had an opportunity to thoroughly investigate. While there are a few cases which followed soon after an accident, the evidence that the accident held a causative relation to the bone disease is not sufficient, in my opinion, to satisfy the intelligent searcher after truth.

Another thing to take into consideration in estimating the value of trauma in chronic tubercular bone disease is, How many cases of accident can we recall to those suffering from pulmonary tuberculosis, in which we have every reason to believe that the whole system is reeking with tubercle bacilli, and no manifestations of local infection at the point of injury followed. Again, while clinically, tuberculosis is most frequent in the lungs, and perhaps next in the cancellous structure of the bones, bacteriologists tell us that the skin, nervous system, and abdominal organs are each more often affected; yet no one thinks of ascribing traumatism as a factor except in bone lesions.

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CANCER OF THE CECUM IN A YOUNG ADULT.

By T. C. Witherspoon, St. Louis.

The case I wish to report is one of malignant disease of the cecum in a young man, interesting because of the difficulty encountered in making a diagnosis, and also because of the age of the individual. To the surgeon this field is always an inviting one, and in spite of the progress made during the last twenty years there is still a great deal to be made clearer, much detail to be worked out into sharper definition, much more to be hoped for in the way of reducing the mortality.

Geo. S., age twenty-three, nativity American, shoe cutter by occupation, single, height five feet eight inches, weight 125 pounds, was admitted to the Rebekah Hospital on the 10th day of November, 1899. Record of the examination made at the time is as follows: Severe pain in the belly, paroxysmally intensified, nausea, vomiting, and marked restlessness. The pain is referred to the region between the umbilicus and the right hypochondrium. Palpation indicates tenderness over this region, but nowhere else. In the upper umbilical region, just to the right of the median line, can be felt an irregularly round, hard but not nodular body about two by two and a half inches in diameter. It is freely movable, and pressure in front causes it to recede toward the position of the right kidney. Deep palpation indicates no connection between this body and the liver. Bimanual palpation enables one to pick up a solid body between the two hands, not fluctuant, and apparently attached at no point, moving from the high median umbilical region to the right iliac. Both kidneys can be palpated in their normal position; neither is movable. Percussion over the tumor gives a somewhat duller note than that

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over the surrounding territory. Auscultation reveals a gurgling bowel sound in the neighborhood of the tumor at irregular intervals. By inspection a slight elevation of the surface is noticed, corresponding with the tumor beneath. This becomes more prominent during a paroxysm of pain. Skin is sallow, icterode and tongue much coated. Temperature 100° and pulse 102°. Bowels are constipated and have been for some time.

Family history: Father died of cancer of the stomach six years ago, though no post-mortem verified the diagnosis. Mother is sixty-three years old and in fair health. One brother and four sisters are living and in good health.

Previous history: He had had the diseases of childhood; nothing of a serious nature can be recalled; he never sustained an injury of the abdomen.

The present trouble began seven months ago with slight attacks of cramping in the bowels, which passed away quickly, never requiring at that time a resort to measures for relief. About the beginning of fall he had attacks of nausea and vomiting after taking food of any kind, accompanied by sharp, cramping pain. He lost flesh very rapidly from this time on. His bowels were usually constipated and required the frequent use of cathartics. At present he is thin, but has not the cachexia of a malignant trouble. For treatment, his bowels were kept open and hot fomentations applied very constantly.

The history of the case after entering the hospital until December 15th, when I operated, is as follows: Pain, paroxysmal in character, during the greater part of the time. The periods of comfort were never longer than thirty-six hours. Movements from the bowels after the use of cathartics contained some mucus and no blood.. Vomiting following the ingestion of food, necessitated rectal feeding at times. This always diminished the number and severity of the paroxysms of pain. Blood in small, recent clots was found in the vomitus on several occasions. Urine contained some bile pigment on two occasions, but nothing else abnormal. Thirty

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to thirty-six ounces passed each twenty-four hours. Ethereal sulphates were not looked for.

The diagnosis, while pointing to colon obstruction, was most difficult to make with any degree of assurance. I, therefore, advised an exploratory incision. This was made along the outer border of the rectus, somewhat over the tumor, about three inches in length, its lowest point being about an inch above the umbilical line. Upon entering the cavity, it was discovered, after diligent search, that the tumor consisted of the thickened cecum, which, with the appendix, had become invaginated within the colon and passed along this bowel as far as the middle of the transverse portion. Inflammatory adhesions of recent formation agglutinated the part together, but gentle manipulation readily accomplished reduction of the cecum. The thickening of the cecum chiefly involved the area about the iliocecal valve and extended up the inner aspect of the big gut for an inch or a little more. The mesocolic glands were involved.

To obtain room sufficient for the removal of this portion of the bowel and the lymph node involvement, the incision was carried down along the linea semilunaris to a point one-half inch below the umbilicus. The ileocolic branches of arteries, which supply the cecum, are terminal, practically very few anastomotic loops existing between them. This is very important to remember in attacking the base of the mesocecum. Instead of shelling the enlarged glands out of the mesocecum, I ligated all the vessels which passed through the area involved, and, tracing upward the valvular routes, I amputated the gut in the two portions just beyond that compromised in its nutrition by the ligatures. This removed a large V-shaped piece of tissue, consisting of the cecum, a small portion of the ascending colon and also a small portion of ileum, with the mesocecum containing the involved glands. The bowels were united by the ileum into the side of the colon, the open colon end being first closed. Before closing the abdominal wound, I introduced a small rubber drainage tube into the

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immediate neighborhood of the sutured bowels, giving it exit from the cavity through a small opening made just above the right anterior superior iliac spine. The original incision was closed throughout.

Temperature rose to 101 by the third day, but the pulse was not above 90 at any time. Drainage was quite free. Five days after the operation he developed a severe pain in the right side, but the temperature, pulse and character of the discharge remained unaffected. This lasted ten days and suddenly disappeared. The drainage tube was used for about eight days, each time of dressing reducing it about a half inch. After this a gauze wick was used, and the drainage continued about three months. A number of the ligatures used in tying the vessels were discharged through the opening. The large incision closed by first intention.

Two weeks ago the patient called at my office to state his condition, and I found a markedly hypertrophied scar, quite keloidal in appearance. The picture taken at the time shows this. No other scars have shown this tendency. He has gained twenty-five pounds since the operation, his bowels are regular and appetite very good.

Looking over the literature at my disposal I find some notes of interest on the subject. Billroth and Krausel first removed the cecum in 1876. Martini Gussenbauer reported in 1879 the first successful operation of the kind for malignant disease of which I can find record. Maydl in 1882 successfully removed a cancer of the cecum, and Czerny a tuberculous one in 1884. Since that time the number of such operations has greatly increased.

Heredity apparently plays a part in the acquirement of malignant bowel disease. Our patient gives a history of cancer of the stomach in his father. Krecke in 1898 operated for carcinomatous cecum in a patient of sixty-three, whose sister had cancer of the stomach. J. J. Buchanan in the *Annals of Surgery*, 1897, records the case of a man, thirty-four years old, with cecal cancer, whose father and sister had cancer

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of the stomach. Such an hereditary history I find very frequently in the record of this disease.

Sex seems to play no part in predisposing to the trouble. Age has to be taken into account. The large majority of persons so afflicted have passed thirty years of age. Maydl says one-half of all intestinal carcinomas occur before the age of thirty. Our patient was twenty-three years old. Ewald reports a cancer of the duodenum in a girl of sixteen occurring on the scar of an old ulcer.

Some interesting statistics have been compiled endeavoring to fix the positions occupied by malignant growths of the bowels, the relative frequency in various locations. Weir, in the *New York Medical Journal*, February 13, 1899, gives a record of thirty-five cases, only one of which was in the small bowel. Butlin records two of the large and two of the small. Ewald, from the records given by Maydl, Bryant, Liechtenstern, Muller, and others, gives the location of 1,146 cases of malignant intestinal disease as follows: 874 in rectum, 148 in large intestine, sixty-four in cecum and appendix, twenty eight in ileum, seventeen in jejunum, and twenty-six in the duodenum.

The relative frequency in different portions of the large bowel is given by W. McA. Eccles as follows: (1) Most frequently in the rectum; (2) sigmoid and cecum in equal proportion; (3) descending colon; (4) the ascending colon; (5) the transverse colon.

Butlin reports thirty cases of the large bowel, as follows: cecum, 7; ascending colon, 4; transverse colon, 3; descending colon, 7; sigmoid, 9.

The cecum may be involved upon any portion of its wall, but the neighborhood of the ileo-cecal valve is the most common. In looking for a direct cause for various sites selected by these malignant neoplasms nothing satisfactory was found. Trauma from fecal matter and the tendency to hypostatic vascularity of the dependent portions of gut with ulcer formation are given.

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In searching the records I find a case reported by J. M. Barton of Philadelphia, which is interesting in this connection. In May, 1887, he operated for intussusception, the ileum into the colon. After reducing the cecum the valve was found rigid and it was thoroughly stretched. No lesion could be demonstrated. In November of the same year he again operated because of a recurrence of the symptoms of intussusception. This time he found a cylindrical epithelioma occupying the valves, and removed the whole cecum and a small portion of the ileum. What effect had the rigidity of the valves in causing the growth may be asked. Perhaps the rigidity was due itself to commencing malignant degeneration which was not recognized.

Symptoms of cecal cancer vary with the individual. Constipation alternating with diarrhea is frequently noticed. Spasmodic colicky pain occurs when obstruction becomes sufficient. When the malignant growth projects into the lumen of the gut as a sessile or pedunculated mass, or when the valves are involved, intussusception is very common.

Barton, Eccles, C. C. Booth, J. J. Buchanan, Krecke, König, Körte and others record cases in which the symptoms of acute invagination called attention to the disease. Vomiting shortly after eating, with sharp pain paroxysmal in character, is due to obstruction. Reupp says of twenty cases noted, six began in supposedly healthy individuals with symptoms of acute stoppage of the bowels.

Gilbert Saurdille reports a case that gave the symptoms of recurrent appendicitis. I myself had under observation a case of the kind. The initial attack commenced with fever, pain, local swelling and evidence of acute appendicitis. After several recurrences a cancerous cecum was removed.

Prognosis in this condition is good as regards re-appearances after removal, but not so good judging from immediate percentage of recovery following the operation. In this latter respect much improvement is recorded during the past ten years.

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The progress of a malignant intestinal growth may be very slow if let alone, though it as a rule proves fatal quickly after obstruction becomes marked. C. K. Briddon, in the "Annals of Surgery," 1894, reports a case of general malignant infiltration of the large bowel in a man of thirty-four which dated back twelve years.

The possibility of metastasis or local return after removal is small as compared with cancer in other organs. Martini Gussenbauer operated in 1879 upon a patient who died eighteen years later, and post-mortem showed no evidence of malignant growth anywhere.

Mikulicz reports a patient healthy eight and a half years after removal of a portion of malignant bowel. Czerny and Billroth each report one after six years; Körte one after six and a half years, and two after three years. Edmunds reports a case four years after removal of a malignant cecum without symptoms of return. Dr. Howard Lilienthal reports a case of malignant disease of the transverse colon in which it was impossible to remove all of the enlarged glands at the base of the mesocolon, and yet three and a half years afterward there was no evidence of return.

Early glandular involvement in cases of this sort seems to be usually an infection other than cancerous.

V. Bergmann operated upon cancer of the colon, eight of which he has traced since the operation. One lives six years after, two live four years after, one three years, two two years, and one one year.

The mortality directly resulting from the operation is variously given. Allowance must be made for the time in which the different records were made. Baillet collected forty-five cases operated on before 1889 with a per cent. mortality of 37.7. Twenty-five cases between that date and 1894 with a mortality of 28.6 per cent. These cases were malignant and tubercular chiefly. Czerny operated eight cases and lost one. Körte nine and without a death. Greig Smith in his "Abdominal Surgery" says "a tabulation of recent cases might bring the mortality under 40

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per cent. but probably over 30." Kendal Franks gives the record of 51 resections of the large bowel and a mortality resulting of 40.8 per cent. Julliard had three cases and no death. Franzke three and two deaths.

In performing this operation many prefer the button, plate, etc., method of uniting the upper and lower portions of gut, while others directly conjoin the ends by the interrupted suture. I find no peculiar advantage resulting from any special method. The clean, quick and thorough method, using the means at hand, fulfills all requirements.

If there is marked distension of the gut behind the growth a previous artificial draining will do much to better the patient's condition and greatly add to the prospect of a successful issue from the operation.

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PATHOLOGIC FEATURES OF DR. WITHERSPOON'S CASE OF CANCER OF THE CECUM.

By Willard Bartlett, St. Louis.

The anatomic specimen is made up of 11 cm. from the cecum and 2 cm. from the ileum, both ends having been divided squarely across. Upon opening the cecum longitudinally on the side opposite the mouth of the ileum, there is seen in the middle of the surface thus exposed a regular round eminence with a diameter of 6 cm. Sloping from the level of the healthy mucosa this attains as its center a height of about 2 cm. and includes in its lower half the ileo-cecal opening. The mucous membrane, covering about one-half the mass, is intensely red, but presents no further macroscopic evidences of change, with the exception of one small superficial ulceration situated at the upper border of the ileo-cecal opening. (The microscopic specimens here exhibited are from the edge of the area just referred to as ulcerated.)

In cut No. 1 the healthy mucous membrane can be traced to a point where the epithelium covering the villi breaks through the muscularis mucosae and invades the submucosa. Thus are formed tubules of various sizes, the diameter of the smallest being about equal to that of the cripts of Lieberkuehn, while at others it is many times as great. As regards shape, they are completely atypical, every possibility being exemplified. In size and shape the cells lining the newly-formed tubules resemble closely the parent epithelium of the villi, with the exception that no goblet cells are seen. The nuclei present nothing of uncommon interest. Multiple layers of epithelium line most of the tubules, only a comparatively small number of them being seen to contain a single layer — a

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conclusive evidence of extreme activity in cell proliferation. The lumen is in most instances empty, some of the tubules in

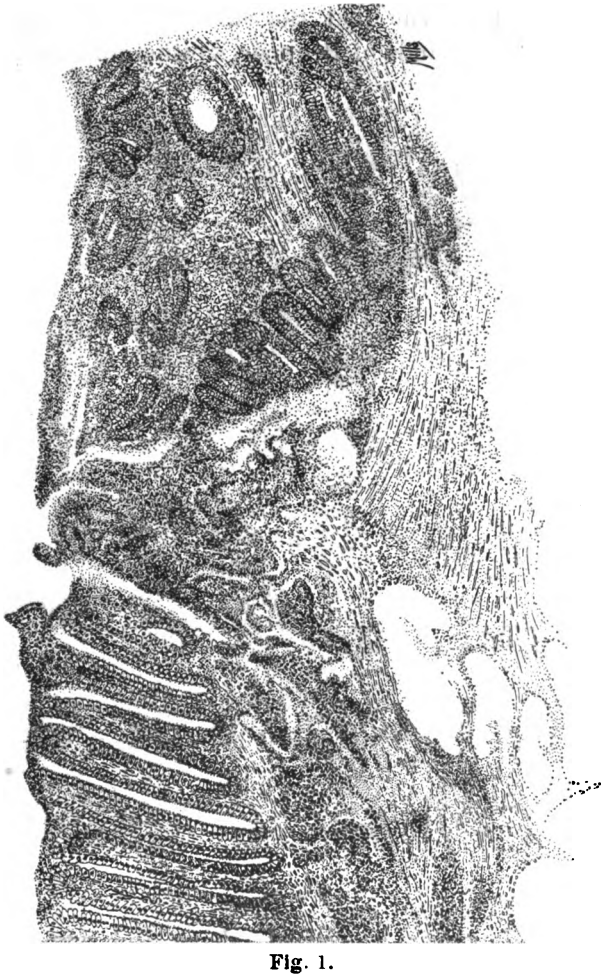

Fig. 1.

cut No. 2, which lie deep in the submucosa, being stuffed with leucocytes; absolutely no solid branches are to be found. No "tunica propria" is in evidence surrounding any of the tubules. The connective tissue stroma is, in some parts of

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the tumor, quite dense and occasionally marked by areas of round-cell infiltration.

Is this epithelial manifestation to be regarded as benign or malignant? It is true that the submucosa of the intestine possesses, in the glands of Brunner, epithelium-lined tubules.

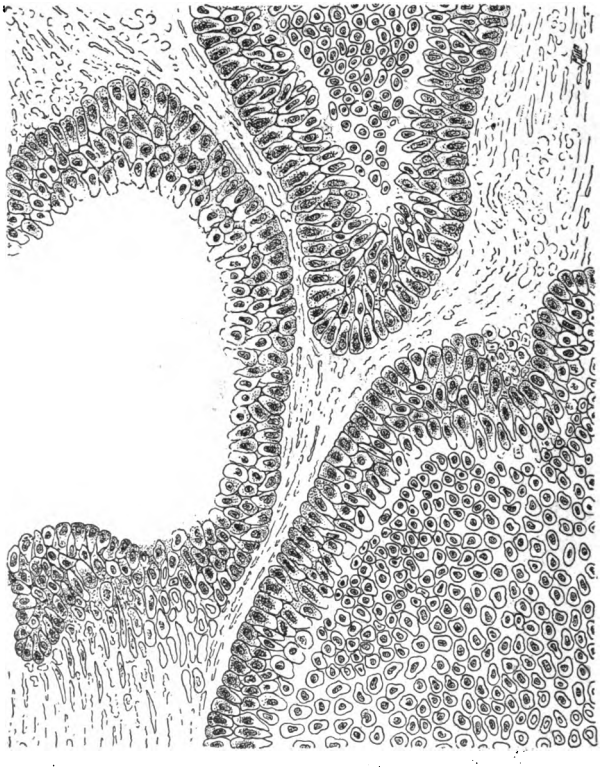

Fig. 2.

These show, however, as regards shape and size, a certain regularity — are lined with a single layer of epithelium and are covered, each of them, by a tunica propria. But the glands of Brunner are limited to the duodenum, and it is seen further that this can be neither normal gland structure nor a simple adenoma, because we can demonstrate surface epithe-

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lial cells invading a foreign tissue and arranging themselves into tubules several layers deep, at the same time devoid of any sort of tunica propria. The clinical features of a case usually aid us greatly in making a diagnosis between benign and malignant adenoma; that this, however, is not always true is proven by Cornil and Schwartz[1] in the report of a breast tumor with benign clinical manifestations, which was shown by the microscope to be malignant. There had been suspected in this patient either a "fibro-adenoma peri-acineux" or a "fibro-adenoma papillaire," the two classes into which the French authors divide the fibro-adenoma, the so-called classic adenoma of the breast.

We are most of us guilty of a certain lack of refinement regarding the nomenclature of this sort of tumor. It is worthy of note that Ziegler[2] calls such a growth a "adenoma tubulare destruens," with regard to its anatomic characteristics, but terms it a "carcinoma adenomatosum" as far as its clinical significance is concerned. The same writer gives the name "adeno-carcinoma" to a tumor which begins as an adenoma and later suffers a carcinomatous degeneration.

Malignant growths of the intestines possess many etiologic factors common to those found in other parts of the body, but at the same time some that are unique. In this connection must be mentioned the fact that polyadenomata of the large intestine, of which Quenu and Landel[3] have recently made an exhaustive study, frequently undergo cancerous metamorphosis. The effect of trauma and of irritation, as being of influence in the etiology of malignant tumors, is a matter of almost every-day observation. The injurious effect of fecal accumulations must then be taken into account if we agree with Lardennois[4] that nearly every victim of intestinal cancer gives a history of chronic constipation. It is suggested by the same author to the believers in a parasitic theory that the organisms may very conveniently be introduced with the food.

Some interesting observations have been made with regard

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to the age at which the individual is attacked with carcinoma of the bowels. Brinton with 600 cases, Welch with 2,075, and Haeberlin with 11,422, say that three-fourths of all cases occur between the ages of 40 and 70 years. A study of that remaining fourth furnishes food for reflection to those who have held cancer to be a disease merely of adult, or I may say even of middle life. Felch[5] saw such a tumor of the upper rectum in a youth of 20. Csesch[6] reports a similar case in which the patient was only 18. Carcinoma of the stomach at 16 is vouched for by Lindner and Kutner[7] in their recent book. Decidedly more interesting was Kaulich's patient, who presented the same disease at the age of but one year and a half. It comes to us as astonishing that Bullingworth saw cancer of the stomach in an infant of only five weeks. All theories are, however, upset when we read that such authorities as Wilkinson, v. Leube and Wiederhofer have seen congenital carcinoma ventriculi. Strange as it is, the statement is found in the work of Lindner and Kutner just referred to. A glance at recent statistics will be more instructive than further mention of individual cases, and must at the same time bring out more clearly the relation between age as a factor in general and the age in this particular case. Reiche[8] found that 0.05 per cent. of those who suffer from carcinoma are attacked between the years of 1 and 15, and that 0.11 per cent. become affected between 15 and 20, and that 0.29 per cent. only fall victims to the malady from 20 to 25 years of age. The same author discovered further that of all people dying, there die of cancer between the ages of 1 and 15 but 0.01 per cent.; between 20 and 25 just 0.03 per cent.; while between the years 75 and 80 the comparatively large 7.30 per cent. Thus in view of statistics, the case which is the subject of this sketch, occurring between the ages of 20 and 25 as it does, must remain the object of more than passing interest.

In connection with the etiology it may not be out of place

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to mention with Tillmanns[9] that carcinoma of the intestine is not so common as the same disease of the stomach. It is, however, according to Stengel,[10] this variety of tumor which more frequently than any other affects the intestines. To put the matter in more definite shape, the adeno-carcinoma, says Zeigler,[11] is the one with which we are here concerned.

The experience of most surgeons confirms the statement of Schmaus,[12] that men are more often than women the subjects of such growths; though the preponderance of males so affected can generally be hardly so great as Boas[13] found it in his practice. He reports fifteen cases, and of all his patients but three were women.

There exists some difference of opinion among the writers with regard to the frequency with which different localities in the intestine are primarily affected, all agreeing on one point, however: that the large gut is the seat of the disease in far the greater number of cases. By way of emphasis of the last sentence may be added that Soerensen[14] considers the ratio for the small bowel very high, when in reporting Hahn's seven cases he says that the tumor in two of them was so located. For this division of the tract the site of predilection is, according to Kaufmann,[15] the diverticulum Vateri.

Orth[16] claims for the large intestine that the vicinity of the valve of Bauhin is most commonly affected, but in this he is not in accord with several other highly reputable authors. The experience of Kaufmann has taught him that the different parts of this organ are the seat of cancer in the following order of frequence: rectum, sigmoid flexure, hepatic flexure, splenic flexure, ileo-cecal valve. This whole matter has been thoroughly canvassed by Senn,[17] who concludes that of one hundred such growths in the entire intestinal tract, seventy-five involve the rectum, ten the sigmoid flexure, four the splenic flexure, three the hepatic flexure, two the cecum, four other segments of the large gut, while only two are situated in the small one. Thus it is seen that the statements of the

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American surgeon coincide practically with those of the German pathologist, those of the former being, however, the more definite; we can then, after perusing both, incline to but one conclusion, viz.: that carcinoma of the cecum is a decidedly uncommon malady. The case at hand must further seem all the more interesting when we reflect that the disease occurred at a time of life (between the ages of 20 and 25) when but 0.29 per cent of the sum total of its victims are attacked.

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COXA VARA.

By A. J. Steele, St. Louis.

About two months since a boy, 15 years of age, presented himself with the following history: During the past year he had had slight pains about the right groin and occasionally in the right knee, not so severe, however, at present as formerly; he also experienced fatigue and soreness after use of limb. A slight lameness or limp was first manifest about three months ago, since which time it had been steadily increasing. Physical signs noted were: Three-quarters of an inch shortening of the right limb; trochanter prominent and three-fourths of an inch above Nélaton's line; outward rotation of the foot with eversion and adduction of the limb. Abduction, inversion and flexion of the thigh were all limited. Measurements from top of trochanter to outer malleolus of both limbs were the same. Increased circumference of the leg and diminished circumference of the thigh were present.

There was no history of injury except that a short time previous to the advent of the pains he had been struck on the lower part of both thighs by a heavy wagon-tongue. Though this was followed by some soreness, yet it did not confine him to bed nor prevent his attending school on the day following. His general health had always been good and there was no evidence of previous rickets.

The skiagraph showed the femoral neck so bent as to allow a riding upward and backward of the trochanter, the bending being most apparent about the center of the neck, as evidenced by an elevation at that point. Diagnosis: Coxa vara.

Remarks: — This affection is sufficiently rare for me to have taken the liberty of calling the attention of the Association to

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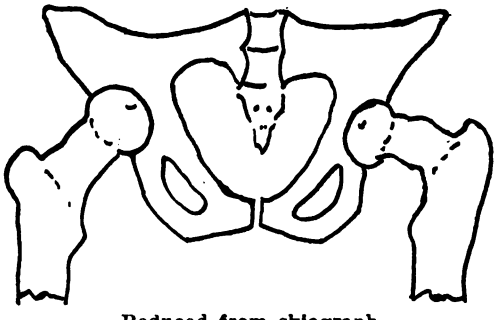
it at this time. Its advent is gradual and usually during adolescence. Two-thirds of the cases occur in males; one-third of the cases are bilateral. Just why the cervix femoris



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should become so soft as to yield to the weight of the body cannot be definitely stated. Rachitis will soften bones, but there is no evidence here of general rickets, and it is difficult to believe that one part of a single bone should be the seat of the disease, yet when we consider the anatomical relations of the neck of the femur to its shaft we are not surprised that a deformity is liable to occur at this point; for the two are joined at an angle and thus at a disadvantage for sustaining great weight. So that any general weakness such as occurs in childhood when prone, for example, to rachitis, or in adolescence when rapid growth affects the stability of the tissues, would predispose to a bending of this bone as the superincumbent weight, possibly increased by occupation, was brought upon it. Some accidental overstrain or injury would additionally act as a cause.

No doubt cases have been called coxa vara that had been produced by fracture of the femoral neck, but such cases should be excluded, though as the resultant deformity is similar they might be called traumatic coxa vara. Fracture would give a history of accident, of injury, — as of a fall from a height, attended with joint irritation and immediate impairment of

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function, and thus should be at once diagnosed. We had been taught to believe that fracture of the femoral neck was an appanage of old age, but we know that it does occur in middle life, and not infrequently in children, and in the latter not necessarily, as we might suppose, at the epiphyseal junction, but in the continuity of the neck.

The deformity in coxa vara is progressive until the limit of the bone resistance has been reached. The inconvenience to locomotion is the chief symptom, and this is due not only to the real shortening of the limb but also to the apparent shortening resulting from the adduction. But why this adduction? Why is abduction diminished or lost? Because of the new and changed relation of the head and neck of the femur to the acetabulum. Normally the neck is oblique downwards and outwards; in coxa vara it is either transverse or oblique upwards, thus the upper surface of the neck strikes the upper edge of the bony socket and mechanically prevents further abduction.

An ingenious operation has been devised to remedy this condition, viz., to do a cuneiform osteotomy from the outside of the femur opposite the lesser trochanter. A wedge of bone, with three-fourths of an inch base, is removed. The limb is then extremely abducted, thus the cut surfaces of the bone are brought together, the limb is put up in this position and held by a spica plaster-of-Paris bandage and thus kept for four or more weeks or until the bones have united. A long traction hip splint is then worn to complete the cure.

Perhaps a better understanding of the operation can be had by inspection of the outline cuts — largely borrowed from Whitman. Fig. 1. The normal femoral neck. Fig. 2. The deformed neck. Fig. 3. The wedge of bone removed. Fig. 4. The cut surfaces of bone brought together by extreme abduction of the limb. Fig. 5. Firm union taken place and limb brought down, the adduction being being overcome.

Cuneiform osteotomy does improve the position of the limb but actually shortens it. Would not a preferable operation be

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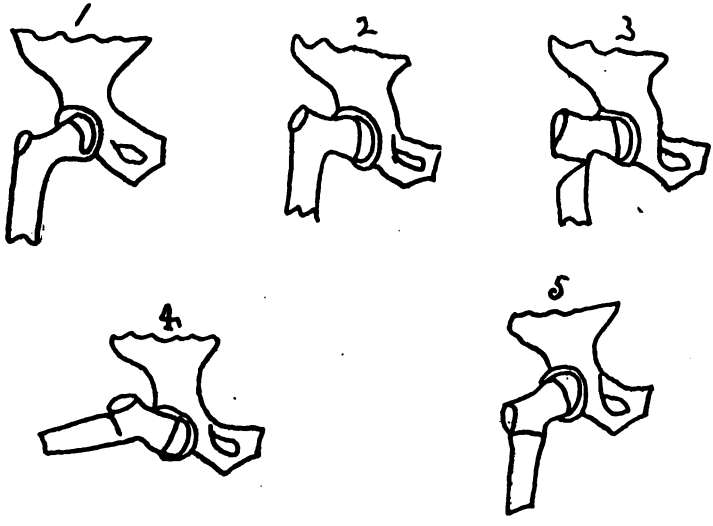
a linear osteotomy, done on the inner side of the bone, cutting three-fourths of the way through, breaking by abduction and



so retaining the limb in this improved position until union occurred? (See Figures 6, 7 and 8). Thus the limb would be lengthened rather than shortened.

Fig. 6.

Fig. 7.

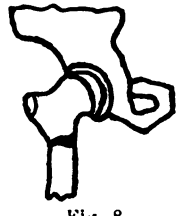


Fig. 8.

Should osteotomy not be consented to, then much can be done in the way of improving the position of the limb and in the matter of locomotion by using forcible and continuous abduction, by employing traction to the limb and by removing the weight of body through the means of crutches and

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high shoe (to sound limb). When the disease has spent itself, *i. e.*, is no longer progressive, and the femoral neck is thoroughly hardened then a patten to the shortened limb will modify the lameness. During the active stage the administration of the syrup of the hypophosphite of lime may encourage more rapid hardening.

Cases of fracture of the neck of the bone in children should be recognized at once and treated by traction and immobilization, and later by the outside long traction brace. But if not recognized until the limb is shortened and the neck deformed, then the same operation of osteotomy as for coxa vara should be done.

The term coxa vara was first suggested by Hofmeister in 1894. Yet Fiorani had recognized depression of the femoral neck as one of the deformities of childhood in 1881, and E. Müller as it being peculiar to adolescence in 1889. Mr. Keetley, of London, claims priority in the employment of osteotomy for the correction of this deformity, as published by him in 1888.

This affection ought not to be confounded with congenital dislocation of the hip, for the latter trouble manifests itself as soon as the child begins to walk, and an examination shows the head of the bone lying on the dorsum ilii and capable of gliding up and down on it. Coxa vara could be confounded only with an advanced stage of hip disease, but the fixity of the joint and the possible presence of abscesses would distinguish the latter.

This affection of coxa vara is not so rare as might be supposed and there is no doubt that cases of it have been wrongly diagnosed in the past. But may we not expect that in the future, when such cases are met with, they will be placed, even by the general practitioner, in their proper category?

NOTE.—Since the above was presented to the Society, I have had two additional cases of coxa vara; one, a colored girl, seven and one-half years of age, the other a white lad,

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sixteen years of age. Both patients had the characteristic limp, the shortening, the adduction and the limited abduction and outward rotation. No history of traumatism nor of rickets in either case.

DISCUSSION OF PAPERS BY DRS. McCANDLESS, HIGHSMITH, WITHERSPOON, BARTLETT, AND STEELE.

Dr. A. H. MEISENBACH, St. Louis: Dr. McCandless very pointedly called attention to the fact that a revolution had taken place in regard to the treatment of fractured patella. I well remember that in 1890, I think it was, a perfect furor spread or swept over the country in regard to the wiring of the fragments of the fractured patella. In spite of the differences in the conditions which are met with, there were men who advocated wiring all cases. I happened to visit a very important clinic by * * * at Amsterdam and there I saw a case of fracture of the patella that had been treated by means of massage according to the method of Nitzger then of Hamburg. This man had a separation of the fragments, of fully six inches, so that you could lay the whole hand between the fragments, and the fragments were being united by ligaments; the condyles of the femur and head of the tibia could be felt. Yet in spite of this that man had a good ligamentous joint, he could bend his knee, could get on a table with the greatest ease. The fact that there has been a disturbance of the large anterior leg muscle is then taken into account, and for this reason the massage treatment is advocated, and carried out in these cases, namely, the leg is placed upon a splint until the reaction is passed by; then the splints are taken off and systematic massage of the large anterior leg muscle is carried out. This is repeated every day or every other day, according to the reactions that follow, and eventually the fibrous ligament is formed, and the patient recovers fairly good use of the limb. Previous to this time I had an opportunity of treating a number of cases of fractured patella, and I followed out the Hamilton plan and the one advocated by Dr. McCandless, using rather than the T bandage the figure of 8, keeping the ends of the factured bones in position, and using adhesive strips, as I felt that by those means I could bring the fragments better in place and keep them there and get them more firmly fixed. I recollect several cases that I attended which I see from time to time on the streets of St. Louis in which there is fibrous union only taking place, and there is no physical disability so far as the use of the leg is concerned. I saw a man who, in 1890, sustained a fracture of the patella by falling off a wagon; I had treated him in the same way, and in that, as in the other cases that I treated, there was a good result. So I think the practical point in the treatment of fracture of the patella, except in those cases in which there is compound fracture or in which there is possibly a great overlapping of the fragments of the bone, is to keep the parts fairly

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in apposition, or as nearly as possible, and I do not think that wiring of the fragments is often necessary. I am glad to know that the reaction has taken place. I took the same position in the St. Louis Medical Society in 1890 that I take here and in all my surgical experience I have not found it necessary to wire a fractured patella.

DR. R. M. FUNKHOUSER, St. Louis: In regard to the manner of treating, not only fractures of the elbow, but all fractures generally, a reaction is setting in now, and I think it is here, the keynote of which is that in all fractures, the parts should be placed in such a position that they can be examined within a certain given time sufficiently often and massage practiced, in order to prevent deformities. This is particularly true in connection with Colles' fracture and fracture of the femur. I think I was one of the first to receive instruction in the treatment of fractures by plaster of Paris and when I returned to St. Louis I practiced that, but for some time I have rarely used the plaster of Paris splint in any fracture exclusively. I may do it in a modified form in fracture of the femur, but I do not put up a fracture of the femur so that I cannot look at it from time to time. In regard to pelvic suppuration, I believe now the consensus of opinion of surgeons is towards conservatism and I know of no better treatment than that of incision and drainage through the cule-de-sac, through the vagina. I think many cases are saved — many cases get well that otherwise would have been deprived of the appendages of the uterus. It is true that there are some cases in which we are unsuccessful in reaching the pus, but at the same time if you take the vast majority of cases you will find that satisfactory results have occurred under this conservative treatment. This method of treatment, although modified to some extent in this country, I am sorry to say, has been abandoned in Europe, where it originated, and they have returned to the American route — the superior route.

DR. J. F. BINNIE, Kansas City: One of the principal features in the treatment of fracture of the patella should be attention to the fibrous capsule of the joint. In certain cases it is absolutely necessary to operate in order to get a good result. These are the cases where not only has the bone itself been torn through, but the fibrous capsule of the knee joint is torn on either side of the patella to a marked extent. If the bone alone is fractured, it is practically always unnecessary to operate. If the fibrous capsule has been ruptured in addition to the bone, then I believe it is necessary to operate in order to get a good result. But how are we to know whether the capsule has been torn or not? A good test as to the necessity for operation is to treat the patient conservatively for a few days until the swelling has gone down, then when the patient is lying on his back in bed with his leg stretched out in bed, make him endeavor to lift the limb a little from the bed. If he can do so or shows signs of doing so, continue your conservative treatment by massage and rest. But if he cannot do that, if he has no power over the limb, then it is necessary to cut down and clean out the joint and suture the torn fibrous capsule. When you have done that on each side of the patella you will find that the fragments of bone will practically lie

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together in a good position and that no wiring of the fragments or suturing of the fragments is necessary. That is the method laid down by one of the French surgeons whose name has escaped me.

Dr. Highsmith has read a very interesting paper on the value of trauma as an etiologic factor in tubercular disease. In my opinion traumata are the cause, where the bone has been overworked — overworked to such a degree that the patient is almost ready to fall down with fatigue — is the cause of tuberculosis of bone, but I think, of course, that it is also necessary that the tubercle bacillus should be present, that the tubercle bacillus is an essential part. Tuberculosis of bone is almost always secondary to a tuberculous lesion elsewhere, but the location of the tuberculosis in the bone is very frequently decided by the presence of a slight trauma.

DR. JOHN PUNTON, Kansas City: While I believe with Dr. Binnie that trauma has been considered an etiologic factor in these cases, it is unquestionably a fact that it is a purely exciting cause and we cannot avoid the conclusion that it is a predisposing cause, and from a medico-legal standpoint this is very important. It is a fact that this relation that hereditary tuberculosis bears is very much the same that hereditary transmission of disease does by nervous disease, and that as a predisposing factor it is a very important one, and ought to be given an amount of credit which it deserves in medico legal science.

DR. A. J. STEELE, of St. Louis: I trust that there in no gentleman present in this room who differs from Dr. Highsmith's conclusions. I have entertained those views as far back as I can remember that trauma is an exciting cause; that is all it is. The tubercle bacillus exists; it is in the blood or lymph channels and a slight accident, as has been emphasized, so interferes with the part that the bacillus finds soil and grows. In a very severe injury — a fracture or dislocation, we rarely have it followed by a chronic tubercular trouble. There the reparative process is so great perhaps as to destroy the bacillus. It is only in these slight accidents that the trouble occurs. But I believe that a trauma is always necessary to give the bacilli access to the part and when the accident occurs that determines where the trouble shall be, in the leg, the hip-joint, the spine, the knee, etc.

DR. A. R. KIEFER, St. Louis: Since the operation for abscess of the lung is getting to be common, I desire to call the attention of operators to one condition which may be met with and which may explain a sudden death that occasionally occurs in such operations. The two pleural cavities normally lie very close to each other in front at the median line between the junction of the second and fourth costal cartilage. Occasionally we find an opening here connecting the two cavities. In such cases if either pleural cavity is opened the patient dies almost instantaneously.

DR. H. C. CROWELL, Kansas City: The vaginal route has been recommended for attacking extrauterine pregnancy. From my own personal standpoint, I may say unqualifiedly, that I believe the statements of Kelly and the report of his eleven successful cases operated on through the vagina have done more harm and sacrificed more lives than any one other procedure

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for this particular condition. No matter how expert a diagnostician a man may be, it is an absolute impossibility to say exactly the condition that you have by a vaginal examination, by a bi-manual palpation, therefore we are uncertain; it is an indefinite procedure when you go through the vagina for the relief of these conditions. The hemorrhage of which the doctor spoke as being the result of the laceration of small vessels I take to be due to the partial separation of the chorionic attachment. If the rupture is slight we have continuous and repeated hemorrhage with the symptoms of fainting, shock and pain. Without hemorrhage we have no pain. No other condition has been demonstrated to be the cause of the pain. And when we go through the vagina to attack these conditions we are not sure of checking this hemorrhage. It is impossible to reach the source, and I believe the true and only method is to go through the abdominal cavity where we can see and know just what we are doing and clean out the case perfectly. If we can be absolutely certain that the exudation has been in the broad ligam e nt, no involving the peritoneal cavity, then it is possible that a vaginal operation might be properly made; but in the vast majority of cases a secondary operation is necessary through the abdomen after you have operated through the vagina; many times after an apparently perfect operation through the vagina you will be obliged to open the abdomen and then you find that the first operation was not satisfactory; therefore, I say that it is a hazardous operation and one that should not be undertaken.

DR. W. BARTLETT, St. Louis: There is one matter in connection with Dr. Highsmith's paper that might be referred to, the connection which has lately been demonstrated between the operative treatment of such bone lesions and the fatal termination of the case. It was remarked frequently in past years that general acute miliary tuberculosis followed tuberculosis of localized bone lesions. This was not explained until a year ago when Dr. Bender, of Berlin, demonstrated that miliary tuberculosis in general followed as a result of the following process. It has been known for years that to the production of miliary tuberculosis it is necessary to have a large number of tubercle bacilli thrown at once into the blood stream. Frequently by opening a tuberculous lymphatic node in the vena cava or elsewhere this was found, but it was not understood until Bender found that the opening of a little vein in the vicinity of a tuberculous area could lead to a general bone tuberculosis. Bender in a series of autopsies, discovered that the danger from these tuberculous foci lies right there. A few tubercle bacilli not enough to cause general tuberculosis, gain access to a few small veins. These, I say, will not set up a general tuberculosis, but in several instances he proved that these few bacilli were sufficient in number to settle down on the wall of some one or more veins in the vicinity of the site of operation and there set up a tuberculous growth within the blood vessel affected, and these go on to caseation and liquefaction and at the same time produce an immense number of tubercle bacilli within the small veins, causing caseation and liquefaction; and in this way there is thrown out at once an immense number of tubercle bacilli, sufficient in number to disseminate throughout

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the body, causing miliary tuberculosis, and this being sufficient to cause the death of the individual within a few weeks or a few months after the primary tubercular operation began, death being due to general miliary tuberculosis produced in this way.

DR. GEORGE HALLEY, Kansas City: I wish to say a few words in regard to the treatment of fracture of the patella. The gentlemen have spoken of wiring the fragments of bone together and of treating the fracture by massage. I think that the necessity of the principles involved in the treatment of this condition is often overlooked. As soon as the bone is broken and torn apart, the capsule in almost every case that can be conceived is torn apart as well, and even the fringed ends of this capsule will come together, both in front and behind, from the deep surface of the bones as well as from the subcutaneous surface, and these fragments of the tissues and the blood will effectually prevent the formation of bone again. Believing this to be the case and having opened a good many of these joints with success and lack of success, I concluded that I could, by putting in two spikes through the bone, one from above and one from below, through the patella, and then, with a piece of iodoform gauze around the outside on the skin, I could draw and hold together the surface of the bone. By this means you give the bone a chance to unite, and in three weeks it has formed a sufficiently solid mass, so that it will shortly establish a bony growth between the bony surfaces and give bony union. That I think is a great deal better than a fibrous structure such as you get when the bone is pulled wide apart. You may get some good of the limb for walking with this fibrous union, but it is a poor substitute for the patella.

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PHYSIOLOGY OF THE BILE.

By Charles Shattinger, St. Louis.

Fresh human bile obtained from a fistula is olive-green like the bile of herbivora.[1] Long sojourn within the gall-bladder and post-mortem changes alter the color to a reddish or brownish yellow, making it resemble the bile of the carnivora. Its specific gravity is low, averaging 1008 or 1009. The quantity secreted in 24 hours ranges from 600 to 1000 c. c. in the adult. Small animals produce more bile proportionately to their body (as well as liver) weight than do larger ones.[2]

The normal reaction is alkaline. The composition is very variable, depending upon species, individual peculiarities and time of secretion. A tabulation of constituents would differ almost with every analysis. 97 or 98 per cent. is water. The quantity of pigment ranges all the way from $\frac{1}{7}$ to 1 per cent. Mineral salts and the bile salts proper are present in about equal proportions, less than one per cent. of each. Sodium chlorid is the most abundant of the inorganic salts, the other representatives being alkaline carbonates and phosphates of lime, potash and iron. There is also a trace of manganese. Besides the carbon dioxide in alkaline combination, some exists free in solution. Sodium glycocholate constitutes about two-thirds of the organic salts in human bile, sodium taurocholate being quantitatively the least of the pair. Such is also the case in herbivora, whereas the reverse usually obtains in carnivora. Cholesterin and lecithin, though present to the extent of only $\frac{1}{10}$ per cent. and even less of each, are nevertheless significant ingredients. Fat, fatty acids, soaps and sometimes urea, are also met with in traces. Finally, the goblet cells and mucous glands of the bile-ducts and gall-bladder add a viscid material, which in some animals is a

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nucleo-albumin, but in man seems to be true mucin (Hammarsten).

According to whether the pigment present be biliverdin or bilirubin, the color of the bile will be green or reddish yellow. The green pigment contains two atoms moreof oxygen in its molecule than the red. A series of coloring substances may be obtained from bilirubin through progressive oxidation by chemical agents or electrolysis. Gmelin's familiar test depends upon this phenomenon. The play of colors characterizing it depends upon the formation of pigments, probably corresponding in part to bilirubin (red), biliverdin (green), bilifuchsin (brown), biliprasin (green), bilihumin (brown), bilicyamin (blue), and choletelin (black), all of which have been found in gall-stones.

The preparation of the bile-pigments is the special, though possibly not exclusive, province of the hepatic cell. They represent the iron-deprived residue of the hemoglobin from broken-down red blood corpuscles. Their relation to the retrograde metamorphosis of the latter is exemplified by the fact that after extirpation of the spleen the amount of biliary pigment produced sinks to less than half the normal.[3] Within the intestines bacteria effect a reduction of the bile-pigments, so that they leave the body as stercobilin in the feces, or, after absorption, as urobilin in the urine.

The bile acids whose sodium salts are a characteristic feature of the hepatic secretion are compounds respectively of glycocoll (glycin) and taurin with cholic* (cholalic acid.)

As the latter contains no nitrogen, it is considered a derivative of carbohydrous, fatty or the non-nitrogenous moiety of proteid material. It is an exclusively hepatic product. Taurin and glycocoll both contain nitrogen linked with hydrogen in the radical amidogen. Taurin also contains sulphur. Their molecular structure proclaims them resultants of proteid metabolism. Taurin has been found in

* According to Lassar-Cohn, also with the slightly different fellic and choleic acids.[4]

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muscle,[5] in the lung, spleen and suprarnal bodies. Free glycocoll has not been detected in the human body; but Chittenden was able to demonstrate it in the muscles of a scallop[6] and chemical considerations make its muscular origin probable. It is unquestionably one of the numerous mid-products formed in the catabolism of proteids into urea. The synthesis of glycocoll and taurin with cholic acid is proved to take place only in the liver. An analogous synthesis occurs in the kidneys where glycocoll combines with benzoic acid to form hippuric acid. The bile salts are not found as such in the feces, but are decomposed in the intestines and eliminated in altered form.

The triatomic alcohol, cholesterin, as well as the nitrogenized and phosphorized fatty body, lecithin, are products of cell life in general. They appear to be formed in minute quantity in all tissues, more particularly, however, in white nervous matter, both central and peripheral. Lecithin undergoes putrefactive decomposition in the intestines, while cholesterin passes off unchanged as waste material in the feces.

The iron in the bile constitutes the bulk of that portion of this essential element which the system allows to escape from its tenacious hold. Its amount depends upon the activity of hematopoiesis and hematolysis, rather than upon peculiarities of diet.[7] Other heavy metals may make their appearance in the bile in virtue of their arrest by the liver, whose defensive attitude toward poisons extends likewise to the vegetable and toxic alkaloids.[8]

Regarding the biliary constituents previously named, but not yet described, nothing special is to be noted.

The formation of bile takes place continuously, but its ejection occurs in periodic spurts.[1] The activity of secretion is heightened by the arrival of food in the stomach, during its stay in the bowels and by a fuller blood-supply to the liver. Evidence pertaining to specific secretory nerves has been negative up to the present. The contraction of the gall-

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bladder and large ducts is a reflex act, normally excited by ow of acid chyme over the orifice of the common duct. Afferent paths for this reflex seem to lie in the vagus, while the efferent route follows the splanchnics to traverse the semilunar plexus.[9]

Considered as a whole, the bile must be looked upon as both an excretion and a secretion. In the foregoing, it was shown that it serves as menstruum for the elimination of diverse metabolites. Although devoid of enzymes, it nevertheless exercises an important influence upon digestion and absorption. It owes this property to the sodium carbonate and organic salts which it contains. The pancreatic juice is able by itself to acccomplish a chemical emulsification of fats, but its power in this direction is markedly aided by bile. In some unknown way, the action of steapsin in splitting fat into glycerine and fatty acids is favored by the bile, which also supplies a large part of the alkali needed to form soaps. Bile is a solvent of free fatty acids. All the fats of an ordinary meal could be absorbed in the condition of a biliary of fatty acids.[10] On account of the alkaline earths present in drinking water, in food, and the digestive fluids, some soaps usually insoluble are formed. These are soluble in bile.[11] This secretion furthermore assists the globules of emulsified fat to make their transit through the epithelium of the intestinal villi into the lacteals. The purely physical reason which was thought to underlie this phenomenon has been made doubtful by recent investigations,[12] so that this property of bile remains unexplained. Ligature of the bile-duct of a dog reduced the content of fat in the chyle of the thoracic duct to one-sixteenth the normal amount. (Bidder and Schmidt.) Complete diversion of the bile from the intestines by means of a fistula established in a milk-fed dog resulted in a loss of 35 per cent to 43 per cent of the fat ingested,[13] and in other experiments one to two-thirds of the fat taken as food appeared as fatty acids in the feces. Similar observations have also been made on human subjects.[1]

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Under such abnormal conditions of fat emulsification and absorption, it is likely that the digestive processes in general will be interfered with, thus affording favorable opportunities for putrefactive bacteria. At any rate, the restraining influence of the bile upon putrefaction within the alimentary tract is undeniable, in spite of the fact that it manifests no decided antiseptic potency in itself. The bile of serpents displays remarkable antivenous qualities, exhibited also, but to a less degree, by the bile of some other animals.[14]

In concluding this survey of the properties and functions of the bile, your attention is directed to some disconnected observations which, though primarily of physiologic interest, have considerable bearing on the etiology, pathology and treatment of hepatic diseases. A most practical hint, for instance, is conveyed by the fact that amidst much disagreement regarding other substances, bile is qualified without dissent as a real cholagogue.[15] The secretion is augmented by injecting water into the intestines.[16] A meat diet increases the quantity of the bile as a whole and of its solids in particular. It is liable to induce a change of reaction favoring precipitation of the cholesterin.[8] The latter is held in solution by the glycocholate and taurocholate of sodium. Stagnating in an obstructed duct, bile alters its composition, containing less taurocholate, for example, and more mucin.[17] Mucin readily decomposes, overcoming whatever antiseptic powers bile possesses free from this admixture. An excess of lime precipitates the pigments.[8] Long intervals between meals prolong the sojourn of bile within its reservoir.[8] While in the gall-bladder bile loses water, the concentration affecting all components except the inorganic salts, but most markedly cholesterin and the organic salts. The pressure under which bile flows, while higher than that within the portal vein, is nevertheless absolutely very low. Propulsion is aided by diaphragmatic breathing.[18] In case of obstruction, absorption does not take place directly into the blood, but by the hepatic lymphatics (Fleischl and Ludwig). Introduction of

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the bile-salts into the blood causes solution of the hemoglobin, an increase of urobilin in the urine, and sometimes hemoglobinuria. Injected under the dura-mater, they produce violent motor disturbances, ending in death.[19] The lining of the bile-ducts is endowed with pronounced sensibility.[20] The smooth muscle fibers in their wall may respond by spasmodic contracture to direct or indirect excitation.[20] Induction currents elicit slow but appreciable contractions of the gall-bladder and ducts.[20] Normally, the contents of the ducts may be forced either forwards into the duodenum or backwards into the gall-bladder. This viscus is of inconstant development in animals even of the same species. Thus, whereas the rabbit, beaver, porcupine, deer, goat, sheep and ox all possess a gall-bladder, the rat, camel, dromedary and giraffe have none. Its extirpation, at least in dogs, makes no perceptible difference in digestion and absorption.[21]

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PATHOGENESIS OF GALL-STONES.

By Hugo Summa, St. Louis.

Gall-stones and gall-stone diseases are two different chapters of medical science. Upon me the honor has been conferred to present a discourse on the etilology of gall-stones.

It would have been greatly to the interest of a more accurate understanding of this subject if the committee on scientific program, in its very proper selection of gall-stone diseases as a symposium, would have intrusted some member of the society with the special task to map out the particular points in the etiology of gall-stone diseases.

It is self-evident that in each of the more or less sharply characterized clinical pictures of cholelithiasis there is a gall-stone somewhere in the system of biliary ducts. But it is just as sure that the presence of gall-stones alone is not sufficient to produce cholelithiasis.

We study the etiology of a disease for three reasons: —

1. To prevent its first appearance.
2. To prevent its reappearance (the relapse); and,
3. To obtain clearer and more rational indications for its treatment.

If one should expect that a complete knowledge of gall-stone formations would cause their frequent sequelae, viz., cholelithiasis, to soon become diseases of the past, and as a matter of course some physicians might think that a knowledge of the etiology of gall-stone diseases was unnecessary.

Unfortunately, however, we are still very remote not only from a complete knowledge of all the various causes of gall-stone formations, notwithstanding the very strenuous efforts made in the last twenty years, but I fear that some of the

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causes of gall-stones are beyond human reach, and surely for years to come the prophylaxis of gall-stone diseases, based upon a knowledge of their etiology, will belong to the duties of the already overburdened physician.

It belongs to the domain of the pathologic chemist, of the bacteriologist, and of the pathologic anatomist — in other words, to the pathologist in the widest sense of the word — to investigate the pathogenesis of gall-stones. On the other hand, it is the duty of the physician and surgeon, of the medical man at the bedside — in short, of the clinician — to elucidate the etiologic factors of gall-stone diseases.

This standpoint is justified for several reasons, chiefly:—

1. Because most gall-stones are formed, so far as our knowledge goes, without causing any symptoms.

2. Because possibly 25 per cent of all gall-stones do not lead to gall-stone diseases. For these two reasons they cannot be an object of clinical investigation; and,

3. Only necropsies can give varied material enough to serve as the possible broadest basis for correct conclusions.

However, there are two points in regard to which the clinic will add its mite to the elucidation of the pathogenesis of gall-stones; two questions which, according to their nature, can be settled by clinical investigation only, viz.: heredity on one side and predisposing diseases on the other.

As to heredity, we must admit that the question must be still considered an open one. There are as many writers who lay very much stress upon this point, and there are such that flatly deny to heredity any rôle in gall-stone formation. The time for a just recognition of this factor is still too short, considering the fact that our diagnostic abilities to recognize the various forms of cholelithiasis are of relatively recent date. The diagnosis of gall-stone disease is still by many a physician not thought of in cases where the better trained one easily recognizes it. Therefore it will still require several generations before the material is abundant and large enough admit of conclusions in one way or the other.

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I personally am inclined to attribute quite an important role to heredity, for two reasons, chiefly:—

1. Because to me every disease of an individual is only an episode in the history of his ailments and as necessary a link in the chain of the diseases of his family as he himself is an absolutely determined part of the history of his family; and,

2. Because my own clinical investigation shows, in six out of twenty-three cases of cholelithiasis, inheritance from either one of the parents.

If one considers the history of repeated attacks of localized abdominal pains in some of the ancestors as sufficient proof for cholelithiasis, as Riedel (one of the most celebrated gall-duct surgeons) does, then he may easily arrive at an estimate of 99 per cent of hereditary cases.

The co-called remote causes for gall-stone formations are surely very commonly inherited, but whether or not some other hereditary factors come into play is still a mystery.

As to predisposing diseases, the clinic has thus far proven beyond the slightest doubt that typhoid fever predisposes to gall-stones. But the clinicians became aware of this fact not until pathologic anatomy had demonstrated the existence of typhoidal cholecystitis, and not until the bacteriologists had clearly exhibited the presence of typhoid bacilli in the center of gall-stones. In future, clinical investigations must be directed toward all diseases associated with the presence of bacteria within the portal circulation or the general circulatory system; in other words, toward all septicemic conditions in the bacteriologic sense of the word.

Pathologic anatomy gives us the most important facts. I shall enumerate only those points which have a direct bearing upon my subject.

Gall-stones are formed primarily, almost exclusively, in the gall-bladder. Although they were found in every age, even in fetuses, yet women, and particularly those that have borne children, and aged people are the chief possessors of gall-stones. The percentage for adults is about 10 per cent. I

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myself found in 270 postmortems performed at the City Hospital in St. Louis, in every one of which the gall-bladder was opened, 23 with gall-stones, which would correspond to 8.5 per cent. If generalized it would demonstrate that among the 70 millions of inhabitants of our country about three millions have gall-stones and over two millions suffer from gall-stone diseases. Anatomic facts of importance to these observations, as to frequency, are the prevalence of enteroptosis in its various degrees in females and the pronounced atrophic condition of the gall-bladder in advanced age — atrophic changes which involve involuntary musculature as well as the elastic tissue. In my collection of pathologic specimens I have a gall-bladder taken from a corpse of a man 72 years of age, which contained about twelve of the well known bilirubinate of calcium stones, which is as thin as a sheet of paper and which on microscopic examination shows only traces of the various layers forming a normal gall-bladder.

The gall-bladder, the chief receptacle of gall-stones, I have found in my autopsies either in an entirely normal condition or in all possible morbid states, from a simple catarrhal affection to the highest degree of a deformed shrunken bladder. On the surface of the bladder the first stages of pericholecystitis can be seen as well as the most destructive ulcerations into the liver or adjoining parts of the alimentary tract, adhesions to the adjoining organs to such an extent that it was rather difficult to estimate exactly what organs were involved. But there is no doubt that the affections just mentioned in and around the gall-bladder were the sequel of the gall-stones and not the causes of their formation, a conclusion to be arrived at by looking at the clinical history of the respective cases. In some cases, as already mentioned, the gall-bladder was found entirely normal. We must therefore conclude that if morbid conditions in the biliary tracts were the basis of gall-stones they must have been so slight that a restitution to normal had been effected. Such a process,

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however, could be possible with one condition only — namely, a very superficial simple catarrh of the mucosa.

The microscopic examination of the nuclei of gall-stones exhibits an immense variety of objects. Among the most interesting things found may be mentioned casts of biliary ducts of the liver, a little pellet of viscid mucus, a collection of epithelial cells, entozoa or fragments of dead entozoa, particularly the distoma hematobium (Beale), bacteria in lumps, different species or in pure cultivations, etc.

For a number of such gall-stones Naunyn in 1891 formulated a theory according to which the combination of stagnation of bile and infectious cholecystitis or angiocholitis, leading to what he called a lithogenic catarrh, are the chief causes for their formation. The products of this lithogenic catarrh, mucus, epithelial cells, their decomposition in the ducts, cholesterin, lime-salts, etc., he considers as the nuclei of gall-stones.

Pathologic chemistry of gall-stones teaches us the following facts: Besides cholesterin no other constituent of the normal bile enters into the formation of gall-stones. For already the bilirubin is present in an insoluble chemical compound, the so-called bilirubinate of calcium. Besides this pigment we find some of its oxydation products, such as bilifuscin, bilifulvin and bilihumin, and, above everything else, instead of the taurocholic and glycocholic acid, we find the choloidnic acid. These facts prove clearly that the gall-stones do not represent a simple inspissation or concentration of bile, but admit the only explanation, that a decomposition of bile has taken place.

Such a chemical change might be the consequence of catarrhal conditions of the mucous membranes of the biliary tract, either primary or secondary, upon bacteritic inflammations or the direct result of bacteritic decomposition of the bile.

The bacteriology of gall-stones is one of the most recent additions to their pathogenetic investigation. The chief work

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in this line was done by French scientists, who of late were very ably supported by bacteriologists of our country. The practically most important bacteria found in the center of quite a number of gall-stones were the typhoid bacillus and the bacterium colonis commune, or at least organisms very nearly related to the bacterium of Escherich.

These micro-organisms were also the chief bacteria experimented with, with more or less gratifying results.

My standpoint in experimental pathology is a very reserved one. With all due reverence to this branch of pathologic science, I will confess that as long as the experiments cannot be made on human beings, or at least as long as we cannot imitate the conditions under which nature produces gall-stones, the experimental result ought to be taken with a large grain of salt.

A few unintentional experiments were made on human beings. Gall-stones were found that had formed around the remnants of silk threads left in the gall-bladder from a surgical procedure. It is unknown whether these pieces of thread were sterile or infected, or whether the foreign bodies had led to a secondary cholecystitis.

Suffice it to say that gall-stones of small size were experimentally produced under the combined effect of stasis of the bile and introduction into the gall-bladder of attenuated cultures of pathogenic bacteria.

Harvey Cushing's article on observation upon the origin of gall-bladder infection, and upon the experimental formation of gall-stones, published in Vol. X, No. 101–102 of the Bulletin of the Johns Hopkins Hospital, presents the present state of this question quite completely. I would add to the literature used by Cushing, particularly the publication on the same subject by a Karlsbad physician, Dr. Jacques Mayer, in Vol. 136 of Virchow's Archiv.

I offer the following conclusions: —

1. The causation of gall-stones is a very manifold one. The sooner we abandon the natural desire to search for an

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etiology common to all gallstones the sooner we shall approach the truth.

2. The formation of gall-stones requires a union of at least two factors.

3. Notwithstanding all the efforts made thus far, there are still a number of etiologic factors unknown to us.

4. Our knowledge of the chemical changes in the bile and of the anatomic changes in the gall-bladder in various, particularly febrile, diseases should be enlarged.

5. One, and surely a very important, group of gall-stones is apparently due to the combined effect of temporary impediments in the outflow of bile and lithogenic catarrh of the biliary system.

The chief material of these gallstones, cholesterin and lime salts, is not derived from the bile, but from the destruction of the epithelial cells of the mucosa.

6. Such gall-stones deserve their name "gall-stone" only on account of the locality they are found in.

7. Upon the common sense the question forces itself, why do the same factors, temporary stasis and lithogenic catarrh in other places, as, for instance, salivary ducts, pancreas, pelvis of kidney and urinary bladder, not form similarly composed stones? I must leave the answer of this question to the unconditional admirers of Naunyn's theory.

I am somewhat more reserved, and still believe in the great truth of Lytton's doctrine: The knowledge of to-day is the ignorance of to-morrow.

I am at the end of my paper. Its aphoristic treatment is to be excused by the time-limit given to each paper. The many doubtful points in the pathogenesis of gall-stone are due to the fact that this subject is still in its infancy. They will give for generations to come abundant material for renewed investigation. If there is any value in my paper, I would recognize it in the emphasis of the many problems which are still to be solved in this relatively limited field of medical science. And, after all, it is well to

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demonstrate from time to time to the very modern physicians who think that only their time has solved problems, whilst the men of olden times were phantasts, or at least dreamers, I say it is well to show that even our age is far from the complete solution of even small problems. I, for my part, recognize the advancement of our medical age rather in the sharper formulation of the problems than in their solution.

Many of the earlier investigators into the causation of gall-stones have erred, though mention ought to be made of the part that one of the first authors on gall-stones — Meckel von Helmsbach — believed in the existence of a lithogenic catarrh; yet such representative medical men of previous ages still deserve our heartiest recognition. For there is one motive common to the medical men of all ages, one motive which gives the medical profession such an exalted, unique position, one motive which has guided, and still guides, every age according to its knowledge of facts, the aim which is the final goal of the oldest as well as the youngest member of our profession — the untiring effort to help the human sufferer, thereby realizing the truth of the sentence of the great Roman poet, Ovid: —

> Regia, credo mihi, res est succurrere lapsis.
> ('Tis a royal thing, believe me, to aid the suffering.)

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SYMPTOMS AND DIAGNOSIS OF GALL-STONES.

By W. G. Moore, St. Louis.

The nature of the task assigned me prevents my doing more than setting forth briefly those signs by which we may recognize this condition in contradistinction to those which simulate it.

I take it that it is beyond my prerogative to go into the symptomatology of the various interesting complications caused by the stones wandering into the various cavities of the body, and will therefore confine my efforts to signs which will tell us that a patient has or has not gall-stones.

If palpation of gall-stones in the bladder were possible in all cases no other symptom would be necessary for a diagnosis; but the fact is, it is so seldom that we are able to feel the stones that it is a symptom of no importance except where the abdominal wall is thin and much relaxed. Even then an anesthetic is required in most instances to feel clearly the objects sought.

Cases should be divided into two classes for consideration: —

First. Acute obstructions in which the colic has been caused by a stone recently projected into the ducts.

Second. Cases where stones have become chronically impacted and give rise to infectious angiocholitis.

If all or a majority of the prominent symptons are present in acute attacks, the diagnosis is comparatively easy; but no practitioner of experience will deny that he is often puzzled to satisfy himself that the symptoms are due to gall-stones and nothing else.

Before calling attention to special symptoms, it must be remembered that many persons are found at autopsies to have

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been victims of cholelithiasis who had given no signs of the disease during life.

Naunyn asserts that 25 per cent of all women over sixty years old have gall-stones. They are about three times as prevalent in women as in men.

(a) Pain is the most prominent as well as the most characteristic symptom of gall-stone colic. It comes without warning, in the midst of apparent perfect health. It is paroxysmal and often severe enough to cause fainting, even fatal syncope. It is usually referred to as the costal margin or epigastrium, radiating thence to the entire abdomen.

Mayo Robinson says: "In several instances we have known the pain to begin on the left side, over the stomach, and in each instance, when operated upon, the pyloric end of the stomach was found adherent to the gall bladder or bile ducts," the pain being reflected across the stomach.

(b) Vomiting is rarely, if ever absent; the matter vomited often consists of the contents of the previous meals. It has occurred to me that attacks of biliary colic are prone to appear postprandially. As a rule, the vomiting is not troublesome, disappearing with the irritation. However, Robinson details a case which vomited incessantly before an operation, the effects of which were all that could be desired surgically, yet the vomiting continued until his patient died from sheer exhaustion a fortnight after. Vomiting relaxes the duets, and the pressure of the abdominal wall is somewhat helpful in expressing the stones.

It is well to remember if the common duct is free that bile is vomited, as well as stercoraceous matter in severe cases.

Collapse is so complete as sometimes to resemble perforation of the stomach or intestines or hemorrhage into the abdominal cavity.

(c) Finding stones in the dejecta is proof of the existence of cholelithiasis, but the failure to find them does not disprove its existence, for, after causing heptic colic, the stone may drop back into the bladder.

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So long as the stone remains in the gall bladder or cystic duct, bile can escape through the common duct. Jaundice is consequently absent from the greater number of cases of cholelithiasis. Catarrhal inflammations set up in the gall bladder and cystic ducts, and spreading to the common duct, give rise to a mild form of icterus.

Jaundice is evidence of the obstruction of the common duct. Intermittent jaundice occurs when a small stone is lodged in the common duct and acts as a ball valve.

Chronic jaundice should always remind us of the existence of malignant disease, which should be carefully excluded before operations for stones are undertaken. Mistakes have frequently been made by surgeons with more enthusiasm than diagnostic acumen.

A deeper, darker hue has been ascribed to the jaundice of malignant disease than that caused by stone; but, in my judgment, it is of doubtful value as a diagnostic sign.

Drs. Ord, Murchison, Charcot, Osler, Robinson and others have given much attention to a train of symptoms characterizing chronic infection. Dr. Osler summarizes the matter thus: —

1. Jaundice, deepening after each paroxysm, which may continue for months or years.

2. Ague-like paroxysms, followed by chill, fever and sweating.

3. At the time of the paroxysm pain in the region of liver, with epigastric disturbances.

Two theories exist as to the cause of the fever. One, that it is an irritation fever, like urethral fever, from the passage of a catheter. The other, that it is due to change in the bile produced by bacteria.

Itching is something distressing.

DIFFERENTIAL DIAGNOSIS.

The agony and anxiety of countenance in hepatic colic is not surpassed in any disease. The body is pale, cold and sweating; the temperature often subnormal in the shock of

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the outset, always of moderate degree after it rises above normal, 100° to 103.5°.

Decubitus on either side, first one and the other, with hands pressed tightly over the epigastrium. Patient frequently walks bent forward to and fro, demanding relief between groans and cries. Vomiting, nausea and rigors are present. This is the way I remember most of the cases under my care.

Now, what resembles it, and how do they differ? What conditions cause paroxysmal pain in right side? Gastralgia, acute dyspepsia, with colic, hysteria, appendicitis, spinal neuralgia, pyloric stenosis, lead colic, renal colic on right side.

Jaundice is of no value as a diagnostic symptom in the acute attack, since it does not appear for from eight to twenty-four hours in about half the cases.

In cholelithiasis, as in appendicitis, tenderness over the affected point is found. The sensitiveness to pressure is much greater in appendicitis than in gall-stone colic, and is elicited by very gentle pressure over McBurney's point; whereas deep pressure over a line running from about the ninth costal cartilage to the umbilicus is required to cause pain, and this sometimes fails of its purpose. Unless the appendix is malposed, the tenderness over it, the rigid rectus muscle, the flexed thigh and tympanites are quite sufficient to prevent confusion. The absence of fever in hysteria, the abandon with which the patient throws herself about, the irregularity of the complaint of pain, the violent outbursts of weeping and railing at fate, compared with the agonized groan of hepatic colic should confound none but the tyro in clinical medicine. Add to this the globus hystericus and the polyuria, and the diagnosis is complete.

In right renal colic we have pain of the same character as that experienced in the passage of a gall-stone. It is referred lower in the abdomen, and in the male the pain sometimes extends down the genito-crural nerve into the testicle, causing it to withdraw into the scrotum; it also extends to the inside of the thigh.

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Frequent micturition of small quantities of urine, stained or not with blood, proves the renal nature of the seizure. The history, together with the boring pain about the umbilicus, the constipation and blue line on the germs, will make the diagnosis.

In malignant disease, the pain, when present, is almost continuous. The loss of flesh and strength, the deepening jaundice, the melancholy countenance, the absence of the ague-like symptoms found in chronic cholelithiasis, all go to make up the cancerous cachexia, which only needs the tender nodules in the liver and edematous feet to complete the picture.

Gastralgia is a neurotic affection not attended by fever. The pain though paroxysmal lacks the intensity of gall-stone colic, and pressure gives relief rather than pain, as would the case in the passing of stones.

The short duration (twenty minutes to an hour), relieved by eructations or simple remedies, is a very different matter from hepatic colic. Vomiting is the exception; in biliary colic it is the rule.

The other conditions enumerated as causing seizures of pain in the right side need not be further contrasted here, for they will not likely be the means of trouble or confusion.

This paper could be carried to much greater length by reciting the truly remarkable complications arising in cholelithiasis and the reports of interesting cases, but this is neither the time nor place to do more than I trust has been done, setting forth the symptoms by means of which we may arrive at a correct diagnosis.

DISCUSSION ON PAPERS BY DRS. SHATTINGER, SUMMA AND MOORE.

DR. J. D. GRIFFITH, of Kansas City, in opening the discussion, said: I see no reason why this part of the abdomen should not be invaded,

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if done cautiously, as well as any other, with the exception that when we arrive at the splanchnic area, we are in great danger of shock. This subject of gall-stone, of course, is one which is of interest to us — to the general practitioner as well as to the men who are supposed to be in the surgical line. The etiology of this subject is one which has interested me to some extent, but it is in this way that I have found that there is something, at least in the few cases I have seen, in heredity. I have found that in one or two patients on whom I have operated for gall-stone, the lithic acid diathesis seemed to appear on the subject. My ideas about the surgery are very conservative. I do not believe in opening the gall-bladder, but in packing around it and opening it at your convenience after adhesions have thoroughly formed about the wound. I have not had an extensive experience in this, but it is certain that you do not inflict the shock nor have the extravasation which you do in tacking the gall-bladder to the peritoneum or abdominal wall and opening it at once. In regard to opening the ducts, I believe in the same procedure exactly, and if afterwards you want to leave it open, I do not see why you should not because if it is to get well at all it will heal quickly, even too quickly. I have used in my technique nothing more than iodoform gauze. I make a free incision and in forty-eight to seventy-two hours, without the ice bag at all, you can make a free opening into the gall-bladder on either side of your incision — take a pair of forceps and open it thoroughly. I have not found any difficulty in this at all. In my ordinary treatment I have given phosphate of soda by the pint. I saw a patient this afternoon who has all the evidences of gall-stone and she had been taking phosphate of soda about a month, four times a day, and is not jaundiced at all.

Dr. P. Y. Tupper, St. Louis: I think that palpation is very seldom of any practical service even under an anesthetic. We know that occasionally gall-stones have been felt in the gall-bladder in patients who have had no trouble at all in the way of gall-stone colic. In cases of gall-stone colic it is rather exceptional that we are able to feel the gall-stones. Sometimes, of course, especially when the obstruction is in the common duct, you can feel a very much distended gall-bladder, but when that exists we can in all probability, without an anesthetic and by percussion, outline the enlargement satisfactorily. Dr. Moore spoke of pain as characterizing the presence of gall-stones. He doubtless means that pain characterizes those cases in which the gall-stones have migrated into the ducts. He also speaks of the absence of fever in hysteria as a means of eliminating this nervous affection in the diagnosis. We know that fever not only very frequently characterizes hysteria, but recall the statement made by Wunderlich that the highest temperatures known have been found in three diseases — sunstroke, tetanus, and hysteria. So probably the absence of fever is not of much moment as a diagnostic point in eliminating hysteria. I have not infrequently opened the gall-bladder and drained it. At times I have been fortunate enough to remove an impacted stone which I believe was not far down in the duct, in all probability not below the entrance of the

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cystic into the common duct. We read in text-books, however, and hear the essayist speaking of reaching the common duct, opening it, removing the impacted gall-stone, and closing the wound in the duct. Now I know from the anatomical relations of the common duct that this must be a very difficult and rather hazardous proceeding, recalling the fact that the duct passes behind the first portion of the duodenum and then is imbedded between the head of the pancreas and the second portion of the duodenum. Necessarily, then, because of its depth and fixedness, it is very inaccessible and even when reached, it is impossible to bring it to the surface or even manipulate it with any degree of exactness. Recently I read the statement of an operator that in order to see readily what he was doing at this site he had to look through a modified Ferguson speculum. He might have been able to see through the Ferguson speculum, but he certainly would not be able to operate through it.

I desire to report informally a case illustrating the extent to which adhesions may form and what may be the result. The case was that of a young woman who was suffering from stricture of the pylorus. She was passing no food from the stomach into the duodenum, and was becoming so emaciated that death was imminent. At the request of the medical department at the Polyclinic I opened the abdomen but was not able to determine accurately the character of the enlargement, which involved the first portion of the duodenum. To determine its character accurately I opened the anterior wall of the stomach and passed my finger out through the pylorus. Just beyond this point I encountered a hard mass. This proved to be a tightly packed mass of gall-stones, causing complete obstruction. Eighteen stones were removed through the wound in the stomach, and quite a number, as the impaction was broken up, escaped further on into the duodenum. In this case evidently the adhesions had formed between the gall-bladder and the first portion of the duodenum, ulceration had taken place and the gall-stones had become impacted in the intestine, and as a result the gall-stones had caused the intestinal obstruction. The patient gave a history of biliary colic, but no distinct history of jaundice.

Dr. J. S. Myer, St. Louis: The paper of Dr. Shattinger interested me very much, especially the physiological chemistry of the bile; and also his consideration of the bile from one standpoint, namely its secretory function. I believe, however, that the bile has another very important function, in fact its most important function, that is as an excretion. We have in the human organism a number of excretions, among them the urine, the exhalations and feces; and aside from these, those necessary to the excretion in which those substances not soluble in water must be carried off, and I think this function is through the bile, or that the bile in part does this. That is demonstrated pretty thoroughly by the fact that in the fetus there are no secretions taking place — that is there is no production of gastric juice, saliva, none of the secretions, and, notwithstanding this fact, there is profuse assimilation throughout after the formation of the liver, going to show that nearly all the excretions were found in the urine in the bladder of the new born babe.

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Then, furthermore, the liver of the new born babe, is very large; very much larger than is the liver of the adult, in proportion; and this is due to the fact that the liver is carrying on the function of the excretory organs, excreting what would otherwise be excreted by the lungs. As soon as the lungs begin to perform their function the liver undergoes a gradual atrophy, returning to its proper size. This is a very important function of the bile, and in considering its physiology I think this point should be mentioned. I do not agree with Dr. Shattinger in regard to the antiseptic power of the bile. I believe the bile has been conclusively demonstrated not to be an antiseptic fluid. I certainly should not say that a fluid which is a splendid culture medium for germs is antiseptic. In typhoid fever we have an ulceration formed as the result of the breaking down of Peyer's patches which gives a splendid field in the lymph channels for bacteria, these bacteria pass into the circulation and are excreted through the liver into the gall-bladder and into the bile. These germs have been found in the bile of a healthy individual after death, eighteen years after a case of typhoid fever. They produce cholocystitis which continued during the natural life of the individual and even on the death of the individual the typhoid bacilli were found in the bile. If the bile were an antiseptic fluid these typhoid bacilli would certainly be destroyed. We know that the liver is really an excretory organ for bacteria. We find numerous bacteria germs in the bile. So that I think the bile can no longer be considered, in the light of modern physiology, as antiseptic. It has been demonstrated innumerable times that germs can be grown in bile. The function of increasing peristaltic action has been attributed to the bile.

DR. CARTER, Kansas City: In the matter of the formation of gall-stones, I am thoroughly convinced that the general summing up of the doctor's paper is correct, that is, that the cholesterin, while entering into the formation of gall-stones in a great measure, does not exist in the bile as a normal ingredient to such an extent as to produce stone. In other words that there must be some infection or change taking place in the ducts or gall-bladder that would lead to the manufacture of the cholesterin. That has been demonstrated in a number of instances in which the percentage of cholesterin in the bile entering into the gall-bladder has been noted and that coming from it has been shown to be very much decreased. As soon as the diagnosis is made, the great majority of these cases should be operated on, not because they die, but from the complications that arise. It has been pretty well demonstrated that the presence of stones, especially in the common duct or any chronic irritation of the ducts, may give rise to the development of carcinoma. So in the early operation you ward off, not only this condition, but also the destructive processes that may be induced as a result of the presence of bile. I am decidedly in favor, where the stone is in the common duct, of opening the latter at the time of operation.

DR. DUNCAN: If we examine the blood going to the liver in the hepatic artery we will always find cholesterin; we will find cholesterin as a physiological ingredient of the bile, but of course in a soluble condition.

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Anything that will produce a precipitate of the cholesterin will produce the formation of the gall-stone, *e. g.*, some irritation of the common bile duct or of the gall-bladder. We all know that bile is a secretion and an excretion. But I consider that the liver has a function aside from that which we generally give it, in that the liver is the organ through which the great majority of all the albuminoids and all the sugars and starches must pass in their course to reach the general circulation; and I am firmly of the opinion that this organ does receive these substances through the portal vein; that it separates many of the ptomaines and substances not fitted for use which have been digested, and carries them through the bowels to the external world. I believe, were itno tfor the liver, that is standing between our bodies, and the food injested from the external world, we would take into our blood, substances which have been digested in the shape of ptomaines, which would be very injurious.

Is it possible to diagnose a gall-stone with accuracy and certainty? The president will remember a case that was operated on not more than three or four years ago, in which the patient had all the symptoms that Dr. Moore described, but on operation we found there was no gall-stone. There were, however, adhesions of a character that produced an obstruction of the duct and all these phenomena were the result of the duct being tied down so tight. So I would say with this case before me that there is a possibilty of adhesions which may interfere with an accurate diagnosis of gall-stone and make it absolutely impossible. Yet I say further that these conditions which simulate gall-stone so closely demand surgical interference just as much as if there were gall-stone present.

Dr. A. H. Meisenbach, St. Louis: The more I see of gall-stones the more I think gall-stones should be classed in the same category as strangulated hernia or hernia not strangulated, and as appendicitis, for the reason that in a case that has been a simple one we may have an element of danger at any time. There is danger from gall-stones, whether they occlude the duct or not, as they may set up an inflammatory condition, which may take off the patient. The element of pain does not depend on their having passed into the cystic duct or common duct. I have seen cases where no stones passed through the duct, and the patient suffered excruciating pain.

All the fatal cases that have come under my observation have been those where late operations were done, in which we have had inflammatory adhesions to the gall-bladder itself and also where there was present carcinomatous disease of the gall-bladder itself or the liver. So that if a patient has a gall duct with stones in it, or if it can be shown that there is a reasonable certainty that gall-stones exist, it should, in my opinion, be operated on to relieve the case from future danger. Lawson Tait, over twenty years ago, demonstrated that operation on gall-stone in uncomplicated cases is one of the most satisfactory in the realm of surgery. I think, therefore, that we should operate in these cases before there are complications set in.

Dr. H. E. Pearse, Kansas City: I wish to refer to one point spoken of by

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the essayist, that in regard to 25 per cent of women over 60 years old having gall-stone. I have heard that statement made a great many times before and some time when a member of this association is making it again, I would like to hear if there are any proofs of that matter, and if so what the proofs are. A vast majority of women who die have no autopsy performed on them. A vast number of those who go through the dissecting room have no gall-stones. So I would like to test the accuracy of that statement.

I would also like to touch upon one point in regard to operation for gall-stone disease. An operation upon an area of infected tissue about the gall-bladder rests upon the same surgical principle as an operation upon infected tissue in the neighborhood of the appendix. It consists, if possible, in the removal of the cause, — of the nidus — the opening of the gall-bladder and removal of the gall-stones. When this is done we must face the septic peritonitis. If this gall-bladder is brought to the edge of the wound and stitched and the gall-bladder drained, and if the infection has extended through the walls of the gall-bladder and involves the cellular tissue under the liver, the case will go on to septic death just the same as if the gall-bladder had not been opened. It is a problem of drainage when we have these late cases. And along there comes the line upon which the aseptic operation should be indulged in if it is ever indulged in. It seems to me that for the relief of a case of advanced gall-stone disease, in which the temperature is high — in which the infection has spread beyond the limits of the interior of the gall-bladder itself, it is not only necessary for the surgeon to open the gall-bladder and remove the stones and drain the gall-bladder; but all areas of peritonitis accessible to the operation, all infected tissue which can be reached by properly applied drainage, should be reached.

One word in regard to the opening of the common duct which has lately been undertaken by that master of surgery, Dr. Charles McBurney, to open into the duodenum, dilate the orifice of the duct and extract the stone. I have seen him do that on two occasions. Unfortunately in the two operations I have had a chance to follow out — not the two I saw him do — a cure was not accomplished, and I am led to believe, until I hear further from that method of entering the duct, that the better plan consists in the other operation known and tried by which those areas of inflammation lying about the duct can be better drained by the application of gauze. I believe that many of the cases where there is delirium and which delirium is ascribed to the operation, are due to the absorption of iodoform from this particular part, and it seems to me we should really use sterile gauze rather than iodoform gauze in this region.

Dr. Funkhouser: An operation should be done as soon as the case is recognized as gall-stone.

Dr. R. T. Sloan: There are clinical facts and experimental facts which would seem almost to prove that gall-stones arise as a result of microbic influence. The experiments of inoculating rabbits with typhoid bacilli and the production of typhoid septicemia, so-called, and the determining that this was followed at intervals of one, two or three months by the for-

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mation of gall-stones — these experimental facts and the fact that prior to the inoculation there had been no gall-stone in the bladder — this, added to the clinical fact as he states that frequently microbes are found in the interior of the stones, forming as it were the nucleus; these would seem to prove that microbic influence is the direct cause of the formation of the gall-stone. On the other hand, the fact that the entire biliary tract may be known to be infected, though without lesion, for ten, eighteen or twenty years, as was suggested a while ago, without the presence of gall-stone, would seem to negative that. Yet as regards the latter fact it may be mentioned that these cases in which the typhoid and other bacterial bacilli are found many years after the beginning of the infection and without the presence of stone, in those cases I think, not always no lesion was found in the interior of the gall-bladder. The liver, as has been stated, is a strainer eliminating bacteria and chemical poisons not bacterial, that may of themselves be a factor in the production of this condition, out from the circulation.

DR. MCCANDLESS: When the diagnosis is made that gall-stones exist and they are not escaping through the bowel is the time to operate, and the sooner the operation is made the better it will be for your patient. And further, nearly all early operations are favorable ones. It is the rarest thing to lose a patient, and if the bile is not antiseptic, it certainly is not septic. But those delayed cases where there is a suppurative condition are always hazardous.

I do not believe the fluid in the bladder is ordinarily aseptic, therefore sometimes I do take the precaution of introducing my aspirator and drawing off the superabundant gall or bile that I cannot prevent escaping and contaminating the viscera above it. I usually pack around the gall-bladder, and at one operation complete the operation. Further, you can make a much more correct examination of your gall-bladder at the time you make your original opening through the abdominal wall, as you can explore the common duct not only by manipulation, but by the introduction of instruments, and the time for opening the gall-bladder and removing the stone is the time that the first operation is made.

We nearly always find obstruction of the common duct, and that means inflammatory adhesions in abundance, and to wall that off and wait for a second operation is to add to your troubles very seriously. Sometimes those adhesions are so extensive that the only way you can reach it is to go in behind, for the intestines will be so tightly adherent to the gall-bladder in front that they are almost inseparable; therefore you must make your incision well back in the lumbar region. I never have succeeded in sewing up the common duct, and I never have seen any reason for so doing. By making your incision far back you get good drainage, and drainage is all you want; and don't put your drainage into the duct, but just so far so the adhesions will be formed and make a nice sinus and temporarily drain below it in that way.

DR. H. C. CROWELL: Gall-stones are simply symptoms. We have just as

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much disturbance of the economy before the gall-stones, and sometimes more, than we do afterwards. Gall-stones produce pain but the disease of the gall-bladder is usually painful, sometimes without any stones, and it demands greater attention, and what we want is some specific means of diagnosing this condition prior to the formation of the stone. The drainage of the bladder is one of the most efficacious operations which we can do in these cases of chronic dyspepsia. As regards the common duct, don't try to sew it up; put in the drainage. If you have a septic condition of the gall-bladder it may be well to do a primary operation and drain the gall-bladder until the secretions are better, then afterwards remove the stone.

DR. SHATTINGER: I fear that the extreme condensation of language which I was obliged to employ has caused me to be misunderstood. I said in my paper that the bile is both an excretion and a secretion. It is a fact that there is no medical treatment by which you can cause gall-stones to dissolve or disappear, as you have heard from the admirable exposition of Dr. Summa. Of course, if you have a septic condition of the biliary passages, you must deal with it surgically — as with any other surgical condition. But between extracting a gall-stone or gall-stones as soon as you find them and the treating of the local septic condition, there is an immense difference and the gentlemen who extract these gall-stones have not cured the disease. We do not know exactly what the disease is; there are various pathological conditions as Dr. Summa pointed out. Quite a number of these conditions which produce the attack will be left if you take the gall-stones out, and yet they are amenable to hygienic measures. An attack of gall-stone colic is not a mortal affair, and a number of them does not constitute a fatal condition. I should say that the stand that an intelligent, well-informed and conscientious physician should take is that he will operate according to the symptoms which he finds, there being those cases which demand immediate operation and those in which it is proper to defer operation and use not necessarily medical treatment, but hygienic measures.

DR. SUMMA: There will be no advancement of the profession, either of diagnosis or treatment of this disease, as long as the medical profession confounds gall-stones and gall-stone diseases. That is what I wanted to impress by my paper, in which effort, however, I did not succeed. We do not diagnose gall-stones; we cannot; we diagnose gall-stone disease, and only that man can diagnose the gall-stone disease who has seen it on the dead body and knows what it means. Gall-stone does not exist, but only gall-stone disease, that is colocystitis with more or less extensive peritonitis. Until a man has seen what destruction the presence of gall-stones may produce in the human body, he will not be able to diagnose what he has before himself in an individual case. I do not diagnose gall-stones for patients, I diagnose colocystitis or an obstruction of the cystic duct. Now in regard to the proportion of these cases in women. It has been said that 25 per cent occur in women. That is surely wrong. I think I am thoroughly acquainted with the literature of gall-stones in the French, English and German, because I was induced to examine it thoroughly on account of

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sickness in my own family. Statistics show gall-stones in 50 per cent; taking only material above 16 years they found 20 per cent. But what does that mean? Taking women and men alone above 16 years they found them in 20 per cent. Taking all the material 50 per cent. Other statistics fall short of that. It is apparently due to the fact that the gall-bladder is opened and the gall-stones overlooked. I know one pathological institution in which five per cent gall-stones were found, but in that case we did not always look for gall-stones in every case, that came to post-mortem. But above everything else the statistics depend upon the material that is worked upon. In the University of Strasburg there is an institute where people are kept who are not sick, from a certain age up. When I was an assistant in Berlin we made a post-mortem on every case that died and I did not find a single gall-stone although I made post-mortems on 150 children. So the statistics should be studied from all aspects in order to derive much benefit from them.

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REPORT OF COMMITTEE ON "STATE MEDICINE."

By E. L. Priest, Nevada.

In complying with the duty assigned the committee, appointed at our last annual meeting, for the purpose of making a report on State Medicine, we have selected the subject of Medical Legislation, not only from the appropriateness of the subject and the occasion, but also from the fact of its importance.

To-day Missouri, the fifth State in the Union in point of wealth and population, is far behind many of her sister States in regard to wholesome and efficient medical and sanitary laws. By the examination and comparison of the medical laws of various States, we discover Kentucky, Iowa, New Jersey and a number of others, have wise and judicious laws, which on being enforced protect the lives and health of the citizens, while Missouri is practically without any medical or sanitary laws, and has little or no power to protect her citizens from the inroads of contagious or infectious diseases, as was forcefully illustrated the past winter by the epidemics of small-pox appearing in various parts of the State.

Our State Board of Health is almost powerless, and can render but little assistance under present conditions. During the epidemics of small-pox the past season, this Board was called on in many parts of the State, but could be of no service to the citizens in suppressing or controlling the disease.

The last Legislature of Kentucky appropriated five thousand dollars a year for the support of the State Board of Health, and to enforce the medical and sanitary laws of the State, while the Legislature of Missouri appropriated only five thousand dollars to meet a deficiency and support the State Board of Health for two years.

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In the future, as in the past, the people naturally expect the medical profession to take the lead in requiring more beneficial medical and sanitary laws, as well as more liberal appropriation for their support and enforcement. I believe we as a profession are to a very great extent responsible for the present condition of affairs in this State. The subject of medical education, and the protection of life and health is of the greatest importance to every citizen, and it is along these lines we must work, if we expect to succeed.

We are conscious of the fact that we are working for the good of mankind, and deserve to succeed, and let us be determined and persistent in our demands. There can be no doubt of the right and propriety, as well as the duty of this Association to ask the next legislature to enact such laws as will meet the demands of the times, and put our State on an equal footing with other States. As the matter now stands, the citizens have no protection from contagious or infectious diseases and Missouri is the dumping ground for all forms of empiricism. Physicians are numerous and influential enough to bring about just and fair legislation, if they will only agree; and we must agree on making an educational requirement necessary to the procuring of a license to treat diseases in this State. And this should be issued by a board qualified to judge of the applicant's skill and learning. The applicant may then be left free to treat disease in any manner that his experience and judgment may dictate. Such a law would be eminently fair and just and should receive the support of every good citizen, as there can be no reasonable objection urged against its passage. A law placing every one who desires to practice the healing art in this State on an equal footing before the law and requiring of all the same degree of proficiency would be just to all and partial to none.

The power to confer degrees should be left with the medical colleges, but the power to grant a license to practice medicine, surgery and midwifery, or treat disease in this State

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should be granted to a State Board of Medical Examiners, composed of the most reliable, eminent and trustworthy members of our profession.

I am thoroughly convinced the reason why we have not accomplished more in the past in this respect is because we have not had any set plan or idea. We have not as a body of medical men, worked unanimously and persistently together to the accomplishment of a definite and settled purpose. We cannot expect to accomplish anything in the way of medical and sanitary legislation of benefit to the citizens of the State and to the profession until we do agree on some fixed plan of action and requirement. More than once in talking with members of the legislature they have expressed the opinion that if the physicians would only agree on a bill that was just and fair, there would be but little difficulty in passing it. You might consult the members of this association, and I doubt very much if a dozen would agree on any fixed plan unless they were brought together and an effort made to harmonize them. They would quibble indefinitely over non-essential points. We may expect opposition from those who are profiting by the credulity of mankind and the inadequateness of the laws of this State; and it is impossible to keep them from knowing and opposing any effort to raise the standard of educational requirements and to protect the citizens; and we would just as well prepare for it by printing our bills and distributing them to our friends throughout the State and enlisting them in the good cause. The first thing for this Association to do in the way of procuring medical legislation is to *agree on a bill to be* presented to the men that we propose to elect to the next legislature.

I have only one object in reading this paper before the Association, and that is to induce the physicians of this State to agree on a bill. And after agreeing, let us work unanimously to procure its passage.

At the last meeting of this Association, at Sedalia, a committee was appointed to draft a bill to be presented to the

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next legislature, and make a report of its labors at this meeting. The committee has endeavored to perform the labor and trust laid upon it to the best of its ability. The first meeting of the committee was held at Kansas City in June following its appointment. Prior to that time a number of letters were addressed to leading members of the General Assembly, both of the Senate and Lower House, asking their opinion as to whether it would be advisable to draft new bills to be presented to the next legislature, or attempt to amend the present law. With one or two exceptions they were of the opinion that amendments were often unsatisfactory, and that it would be better to draft new bills and make them more modern and better adapted to meet present demands. Acting upon this advice, the committee began to perform the duties assigned to it.

The medical laws of a number of States were procured and examined, also the State Board of Health Law of Kentucky.

At the first meeting of the committee the following motions were made and carried: —

Motion made by Dr. Mitchell and seconded by Dr. Dorsett that substitute of House Bill No. 12 be taken as a basis for a new bill subject to such changes as the committee may see fit.

Motion made and carried that Dr. Priest be empowered to employ an attorney to draft this bill in proper form. Motion made and carried that the clause of the Washington bill defining unprofessional conduct be incorporated in the new bill. Motion made and carried that in revising the State Board of Health Law, provision be made for establishing local boards of health in each county. Motion made and carried that 6,000 copies of the corrected bill, together with the same number of circular letters, be printed, and one sent to each physician in the State. Motion made and carried that the secretary of this committee submit to the secretaries of the local medical societies of the State the request asking the societies to contribute money towards defraying expenses of securing the proper legislation. Motion made and carried

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that the committee on medical legislation be further instructed to revise the State Board of Health Law.

Acting under the resolutions passed by the committee at its first meeting in June, we employed an attorney and began the work of drafting the bills. As previously stated, we compared the medical laws of various States; and, as far as practicable, we were governed by the constitutionality of the laws of Iowa, Washington and Kentucky, and more especially of Kentucky, as the laws of that State have been repeatedly tested by the Supreme Court. I also corresponded with Dr. Mathews, of Louisville, Ky., who is president of the Kentucky State Board of Health. He informed me that the workings of the medical law of Kentucky were very satisfactory and had been sustained in every instance when tested by the Supreme Court.

When the bills were completed, the committee was called to meet again at Sedalia, August 14. After due consideration, the committee made such changes as seemed best, and I was instructed to rewrite the bills and incorporate the changes advised by the committee. This was done and the original committee of five, with the advisory committee, consisting of nearly forty members, were called to meet at the Southern Hotel, St. Louis, during the Christmas holidays. The meeting was well attended and considerable interest manifested in the bills, and the entire day was spent in discussing their various features. Some excellent changes were again made in the bills, and I was again instructed to rewrite them and incorporate the changes. This was done, and the bills now stand as they were revised by the entire committee. If the bills can be made the law as they now stand, and without material changes, Missouri will have the best medical law of any State in the Union. The State Board of Health bill, though not as lengthy as that of some other States, yet in its provisions is inferior to none. With such laws on our statute books, and with means appropriated by the legislature to

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enforce them, the citizens of our State would be well repaid for every dollar expended.

The hygienic and sanitary conditions of our cities, public schools, and in fact of the entire State, would receive attention from competent and trustworthy persons. In conclusion, I would suggest that this association appoint a steering committee of ten members, who are known to be interested in the subject of medical legislation, who shall take charge of these bills and see that they are properly introduced into the next legislature. And I would farther suggest that every member of this association be appointed on a sub-committee to render such assistance as may be in their power.

And still farther, I would suggest that a committee, consisting of one member from each Congressional district, be appointed, whose duty it shall be to see that the bills are presented by the physicians of each county to their respective representatives; and to urge that they be supported without change. Our success in procuring the passage of these bills depends on an organized and intelligent action by the profession throughout the State. If the physicians of the State will make a united effort, and each feel his personal responsibility in behalf of the citizens and the profession, we will succeed; otherwise we will fail.

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APPENDICITIS, WHEN AND HOW TO OPERATE.

By A. H. Meisenbach, St. Louis.

Although much has been said and written on this subject, it has been by no means exhausted, nor have we arrived at a stage where interest has flagged; there remains much to elucidate, much to learn.

In order to fully appreciate the title of this paper we must have in our minds a clear picture of the pathologic-anatomic conditions involved in this disease.

I would, for simplicity's sake, divide the disease into two grand classes: viz., the catarrhal and the suppurative types. Either may be acute or chronic; when chronic, we refer to the disease as recurrent.

It is a matter of great difficulty, at times, to draw the line clinically between these two conditions, especially if the suppurative type is still confined to the walls of the organ and has not perforated and involved surrounding structures. In the catarrhal form the inflammatory process is confined to the mucosa with infiltration of the muscular, connective and peritoneal structures. The organ may not be much altered in size, or it may be greatly increased; adhesions to surrounding structures may exist, or the appendix may be practically free in the abdominal cavity. The clinical features of this type are pain in the iliac region, gastric disturbance, fever and increased pulse. Pain is pretty constant over McBurney's point, although it may be much higher or lower, determined, I believe, by the position of the appendix.

Pain is an element that must have due weight, and I always allow the patient to locate the exact spot with the index finger. It is wrong practice for the surgeon to attempt to

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locate circumscribed painful areas by means of pressure with three or four fingers, as is often done. When a patient always indicates the same spot with the index finger we may rest assured this is the correct location of the pain.

Temperature is not a reliable factor in any form of appendicitis, as has been clinically proved time and again. The pulse, however, both as to frequency and tension, is of much importance, especially in the suppurative variety.

Palpation and percussion may not be of much value in the catarrhal variety, unless there should be adhesions and much infiltration of surrounding structures. If the latter exists dullness may be marked and circumscribed, and palpation may be of value in determining the size of the mass.

I am not much inclined to the belief that it is an easy task to palpate an enlarged and inflamed appendix and to roll it between the fingers as has been described, especially where there are thick abdominal walls and there is much pain. In fact, I believe it to be wrong to violently manipulate — and it is harmful — just as much so as it would be to employ violent taxis in a strangulated hernia.

It is in the catarrhal type of appendicitis that the great operative successes are secured and in which the mortality should be nil. It is also in this class of cases that many successes by internal and tentative medical treatment are scored, and because many of these cases get well from a first, second or third attack many physicians cling to the dictum that appendicitis is not strictly a surgical disease. I believe that it would be better for the patient and the community at large if this view were not held, for it would save many an error in diagnosis and treatment, and would save many lives that are lost on account of late operations. The more I see and operate appendicitis cases the less conservative my views are getting and the more I am inclined to early operation in any case in which the diagnosis is clear, because I believe there is, on the whole, less risk in early operation than in waiting, especially if the case is one of suppurative appendicitis. Here

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is where the shoe pinches — the line cannot always be drawn between catarrhal and suppurative appendicitis — where the one ends and the other begins.

We may lay it down as a rule that, everything else being equal, operation is the safest at a time when there has been a minimum of injury to, or destruction of tissues. The early operations have been proven, statistically, to be the safest.

Another fact that is impressing itself more forcibly on my mind the more I see of appendicitis is that the disease is often overlooked in the earliest stage, being masked, or taken for something else. All colics that are persistent and recurrent should be looked upon with suspicion. Surgeons that are familiar with abdomino-pelvic topography and abdomino-pelvic pathology should be called oftener at an early stage to help clear up a clouded condition of diagnosis. Were this done late operations would be less frequent and many lives would be saved as a result.

SUPPURATIVE APPENDICITIS.

Based upon the anatomico-pathologic condition. I would divide suppurative appendicitis into the following: —

1. Suppurative or necrotic focus confined to walls of appendix; appendix free or slightly adherent.

2. Suppurative or necrotic focus broken through walls of appendix without forming adhesions — in other words, perforation into the free peritoneal cavity. Perforative appendicitis.

3. Perforation of appendix with adhesions formed around perforative focus, forming an abcess. Mass of adhesions surrounding abscess free in peritoneal cavity.

4. Adhesions around perforated appendix. Pus cavity walled off anteriorly and laterally from peritoneal cavity. Peritoneum forms anterior wall of pus cavity.

1. Suppurative or necrotic focus confined to walls of appendix. Appendix free in peritoneal cavity or slightly adherent.

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This is the mildest type of suppurative appendicitis and its symptoms, with regard to severity, are more nearly like those of the catarrhal variety. Here the focus is circumscribed and has not perforated the walls. These are the cases, when operated on in this stage, that swell the statistices of "*so and so many cases of suppurative appendicitis without a death.*" This type, if left to itself, may perforate into the free peritoneal cavity, or adhesions may form and a walled-off intra-abdominal abscess may result.

2. Suppurative or necrotic focus broken through walls of appendix without forming adhesions — in other words, perforation into the free peritoneal cavity.

This form is known as the fulminating type of suppurating appendicitis. In it the whole picture is one of violent invasion. Pain, vomiting, temperature and pulse all give evidence of serious disturbance. Here we have to rely upon pulse, pain, and, in a measure, temperature. When perforation has taken place and the peritoneal cavity is involved we have the symptoms of more or less shock added to the general picture. Palpation and percussion are not of much value.

3. Perforation of appendix, adhesions found around perforative focus, forming an abscess. Mass of adhesions surrounding abscess and forcing its walls free in peritoneal cavity.

This type is the result of adhesions forming around the suppurative or necrotic focus and forming an abscess. These adhesions may be extensive in character or be very circumscribed. In this class of cases more or less tumefaction is found in the iliac region, which can be demonstrated by palpation and percussion. Pain, pulse and temperature are of varying degree, the temperature being of the septic type although not constantly so. This is the type where we have an intra-abdominal abscess.

4. Adhesions around perforated appendix. Pus cavity walled off anteriorly and laterally from peritoneal cavity. Peritoneum forms anterior wall of pus cavity.

In this type the diseased area is clearly outlined and its

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extent may be readily determined by percussion and palpation. I have seen cases in which the abscess was so extensive that it extended into the pelvis, to the median line and into the right hypochondriac region. The pus in these cases is practically extra-peritoneal, so that the operation in most instances resolves itself into opening an abscess, and should not be dignified by the term laparotomy or celiotomy, because it is not.

WHEN SHALL WE OPERATE.

This question is of great moment and has given rise to much discussion. We must have as clear a conception as possible of the pathological condition in each given case in order to answer this question satisfactorily. Much depends on the time when the case is seen by one whose judgment, based on study and experience, is valuable. Hence the statement already made, that it would be well to call in early consultation some one whose experience in such cases gives him an authoritative opinion, so that the case could be studied and watched. The decision should be made deliberately and not on the spur of the moment, as is done so frequently at the present time. The dictum has gone forth to operate as soon as the diagnosis is made. To this I must take exception, for in many cases the diagnosis is made at a late stage, by the consulting surgeon, and in many of these cases it is not always best to operate at once, as will be discussed further on.

The time to operate depends upon two factors: 1st, upon the pathological condition; and, 2nd, the stage of the disease when the patient is seen and the condition recognized.

In catarrhal appendicitis without considerable involvement of structure, the operation can be done practically at any time during the progress of the case. However, the earlier the better, because the patient's strength has not been taxed, and the organ is not involved to any serious extent. One writer has made the statement that he prefers to operate at the height of the fever, etc. Such a statement is not based

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on logical principles. It may be laid down, in the whole range of diseases, that the less involvement of tissue the less reaction we have; the less loss of vitality, the greater the patient's ability to withstand operative shock. These are principles a logical mind cannot dispute. But it is a lamentable fact that logical conclusions and scientific truths are often made subservient to dishonesty and slick business methods.

The best time to operate in any case is within the first 48 hours; but, alas, the surgeon has not often the opportunity of seeing the patient at this early day. Several days have usually gone by and much damage has been done. In most cases, within 48 hours, we have favorable conditions for the patient's recovery from operation. The organ is not yet utterly destroyed or so firmly imbedded as to make the operation difficult. One exception to this, however, is the fulminating type, where the disease is violent from the very onset and perforation takes place astonishingly quick.

If the case is one of suppurative appendicitis the earlier the operation is done the better, because we can control a small localized purulent focus much better than a large collection of pus. Especially is this the case in intra-abdominal abscess. There is one class of pus cases in which it may be better to wait, and these are the ones in which the attack has lasted several days. Adhesions to the abdominal walls have taken place, but these adhesions are not strong. In those cases it would be well to wait until the adhesions are firm.

In order to determine whether to wait or not to wait we must depend on the diagnosis, on the time that has elapsed since the inception of the disease, on the physical condition of the patient, the pathological picture that we are able to make out and the surroundings of the patient. If, in a case of appendicitis that is seen early and is under intelligent observation, the symptoms abate in the first 24 to 48 hours, *i. e.*, there is a diminution of the temperature, pain and

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frequency and tension of the pulse, we may usually wait, especially if it is a first attack. We may then operate during the quiescent stage. Yet, I do not want my position to be misunderstood in this matter. As there is no rule without exception, so, also, I have seen the opposite obtain in such cases; that an attack ameliorated, was apparently on the decline, then flared up again with increased severity and immediate operation became imperative.

In the recurrent variety of appendicitis the time to operate is between attacks. Patients who have had several attacks of appendicitis should have the appendix removed, for it is a constant menace. It is a *locus minoris resistentiae.* I would place such patient in the same category with patients suffering from hernia and gall-stones, they are always in danger that the next attack may be so severe as to destroy the life. If the operation is done between attacks the mortality in this class of cases is so small that it is one of the safest in the whole list of abdominal operations.

Should we operate when the condition of the patient seems extreme? If the patient's surroundings are suitable (hospital and nurse) I believe we would give the patient the benefit of the only feeble ray of hope. No odium should be cast upon the operator, by family or profession, if he has but fulfilled the duties of his calling, the attempt to save human life.

HOW SHALL WE OPERATE.

Considering the difference in the anatomic-pathologic picture that the various forms present, it stands to reason, that, from an operating standpoint, the technique cannot be the same in all forms of appendicitis. It would be as irrational to argue this as to argue that in a case of crushed leg we should employ the same method of amputation.

The operative technique resolves itself into —

1st. The incision.

2nd. The intra-abdominal manipulation, and

3d. Closure of the wound and after-treatment.

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The incision: —

The points to consider are its location and length.

The questions the operator must ask himself are: Are we dealing with a simple catarrhal inflammation? and, are we dealing with a necrotic or purulent condition? Of course, we cannot always answer these questions entirely satisfactorily. We must take into consideration the time the disease has lasted and the physical signs presented by the patient, as outlined by percussion and palpation, in order to determine this.

In cases that are recurrent and operated on in the quiescent state, or in early operations (within 24 to 48 hours) in catarrhal cases, the dictum of Morris may hold good. "An inch and a half incision and a week in bed," but in the majority of cases operated on it will not, because the intra-abdominal manipulations necessarily require larger incisions. In the above cases the incision is made over McBurney's point, curved in character with the convexity outward, and one and one-half to two inches long. The method of McBurney, blunt separation of the fibers of the external oblique and of the internal oblique and transversalis, may be followed. In these cases the appendix is easily brought out, tied off and excised.

In pus cases of the intra-peritoneal variety our incision must be of a different character. We should aim to locate our incision well towards the median line, and large enough to admit of easy intra-abdominal manipulation, so that the diseased area can be well shut off from the free peritoneal cavity by means of gauze pads. That is *sine qua non* in this class of cases, large incisions and thorough packing so as not to contaminate the abdominal cavity. As already stated, the earlier we operate in pus cases of this variety the easier the technique. The incision should be, at least, at the outer border of the rectus or through the muscle itself, and be curved in character. The object in operating is the saving of life and not the attainment of aesthetic or cosmetic effects.

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In cases with anterior adhesions, where the pus is practically extra-peritoneal, the incision should be located so as to be well inward near the anterior spinous process, and parallel with Poupart's ligament or the long axis of the tumor. It is of great importance that our incision be located external to the line of parietal adhesions, otherwise we are forced to run the risk of contaminating the abdominal cavity, or we will have to resort to larger incisions and packing.

In cases where we are dealing with intra-peritoneal abscess of large size, in which it may be a problem of satisfactorily walling off the peritoneal cavity, it may be wise to do a two-stage operation, to open the abdomen and pack and when the adhesions have formed open the abscess cavity and finish the operation. This may be conservative and complicated, but when the saving of life is the object, it is rational.

INTRA-ABDOMINAL MANIPULATION.

In cases of appendicitis that are non-purulent the procedure is simple. The appendix is brought out of the incision and tied off. Necessary precaution should be taken, however, by means of gauze packed around the cecum, in the event that a mistake has been made in the diagnosis of the pathologic state of the parts.

In intra-abdominal abscess the peritoneal cavity should be packed by strips of gauze three inches wide, eighteen inches long, and, at least, four layers in thickness, the ends being left out of the wound. In order to gain room the wound edges should be held apart by retractors or, better, by long guy strings placed through the edges of the abdominal wound and held apart by assistants. The abscess area having been carefully shut off from the peritoneal cavity the pus is liberated by breaking through the adhesions with the fingers. The pus, as it escapes, is carefully mopped up by assistants, by means of small pieces of gauze held in the jaws of haemostats or some other suitable instrument. After all the pus has

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escaped the parts are carefully mopped dry by the gauze pledgets which have been dipped in normal salt solution and squeezed dry. As soon as the field is made clean the adhesions are broken up and the appendix sought after. If it can be found and is intact it is ligated and excised. If it has been destroyed it may be necessary to ligate the stump, or to place a few sutures through the cecal walls, inverting the same. In case either procedure is found inexpedient it will have to suffice to pack the depths of the wound without suturing. Although there may be a possibility of a fecal fistula forming I have never had it occur. Great care must be taken in removing the gauze packing. It would be better to remove the inner layers and to leave the ones next to the peritoneal cavity, replacing the ones removed by fresh ones. Irrigation should be refrained from.

In cases where there are anterior adhesions the manipulations should be very gentle and the search for the appendix should be cautiously done, otherwise the barrier of adhesions between the abscess cavity and peritoneal cavity might be broken through and the peritoneal cavity infected. If the appendix can be easily found and dealt with it should be removed. If, however, it is imbedded in a mass of adhesions and is in such a position that there is danger of tearing up the wall of adhesions it would be better to leave it alone. In the majority of such cases Nature has taken care of the appendix. I have never had, in my experience, any trouble in dealing with this class of cases when treating them simply as an abscess. Irrigation should never be used, for fear of breaking through the adhesions.

I have seen statements of men who claim that they remove the appendix in every suppurative case. I do not believe this, for, if they do, their statistics are not truthful as to results. I will state that in my experience the bad results have always occurred in the form of appendicitis just quoted, in which I have searched for the appendix, torn it out of its bed or, in many cases not finding it at all. The

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same experience has resulted in cases where I have irrigated the cavities.

In cases where the appendix has perforated into the free peritoneal cavity we have infection already established. These are the extremely fatal cases. There is no one procedure that can be relied upon. I have tried saline irrigation, or filling the cavity with saline solution and closing the wound without drainage. Success has been reported by some in a few cases by this method. Postural drainage also has its advocates. Possibly operating in an inclined position and keeping the patient in this position may prove of great advantage. Any procedure is worthy of trial in this unfortunate class of cases.

CLOSURE OF WOUND AND AFTER-TREATMENT.

In simple, non-suppurative, cases the wounds are closed without drainage. I use, preferably, silk-worm gut, or the cat gut layer suture. The silk-worm gut is applied as a through-and-through suture, the cat gut (chromicized) in layers, uniting the peritoneum with No. 1, the muscles and fasciae with No. 3–4 and skin with No. 1.

In cases where drainage is necessary (all suppurating forms) I pack strips of iodoform gauze into the wound in the center of which I place a rubber drainage tube suitably perforated. I decrease the size of the wound by means of silk-worm gut through-and-through sutures or cat gut layer sutures, taking care not to close the wound too tightly. By using a rubber tube in the center of the gauze packing there is less danger of obstruction by too close suturing than where gauze alone is used. The first packing is left 3 to 5 days or longer. I seldom make a secondary suture, allowing the wound to heal from the depths. At the second dressing the wound is cleaned by means of clear water and peroxide of hydrogen, or its analogue. The peroxide is especially valuable as it finds every crevice where there is pus.

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MODERN PATHOLOGY AND TREATMENT OF APPENDICITIS.

By Pinckney French, St. Louis.

A few years ago surgeons were considering a variety of diseases in the right iliac fossa. Perityphlitis, typhlitis, and other inflammations in this region were then regarded as separate and individual diseases. To-day we discuss appendicitis as the essential cause, in fact, the only factor in all the diseases of this region. The history of this subject convinces us that the profession were exceedingly slow in recognizing the importance of a disease of the appendix being the essential cause of the inflammatory process in this region. An accurate description of appendicitis, making it so simple as to command the attention of the profession, yet for more than one hundred and forty (140) years the disease was practically more or less overlooked. The first authentic record of a proper description of appendicitis was by Mestivier in 1759. This surgeon described accurately the affection of the appendix, its perforation, and the dangers attendant upon such a result. No progress was seemingly made from this accurate description. At this time the profession did not understand, fully, the peritoneum. In 1803 a distinguished Frenchman described accurately and fully the peritoneum and within the next twenty (20) years articles were so frequently written upon the subject that we became familiar with its functions, its different folds, and its relation to the viscera of the abdominal cavity. From 1824 to 1827 several surgeons recorded accurately described cases of appendicitis, enumerating all the symptoms which are known to-day as being indicative of that disease. About this time Melier made not only an accurate

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description of several cases of appendicitis occurring in his own practice, but suggested laparotomy and the extirpation of the appendix just as the operation is performed to-day. Guy's Hospital Reports for 1836 contain an accurate and well-written description of appendicitis by the distinguished Dr. Addison (Addison disease fame), yet the operation for relief of appendicitis was not done until 1867, when Dr. Willard Parker, of New York, not only suggested the advisability of removing the appendix, or opening the abdomen where there was suppurative disease or infectious inflammation, but proceeded to perform the operation and soon demonstrated the fact that by operative procedure seventy-five (75) per cent of the cases recovered, whereas previously the majority had perished. In 1883 a surgeon from New York reported one hundred (100) operations for appendicitis, and a gratifying feature of the report was that ninety (90) of the operations were performed in this country, and only ten (10) outside of America. Of this number a large percentage had recovered. This settled the question as to the advisability and success of the operation. At the present time our knowledge of the subject is so advanced that instead of eighteen (18) per cent, which was the percentage of mortality given by Weyth some years ago, we are to-day able to report that in skillful hands of experienced surgeons a mortality of only about two (2) per cent. In this connection may be mentioned the achievements of Missouri surgeons which entitle them to rank among the scientific surgeons of the world.

A complete understanding of the pathology of appendicitis is essential to a proper treatment. Guided by information thus secured one can reasonably foretell early in every attack:

Whether the infection will be local and the course of the disease mild, or

Whether the infection will be general and the course of the disease severe. Pathology not only enables one to interpret the symptoms so as to distinguish between the manifestation of a mild and severe attack, but points out a correct course

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of medical and operative means of relief. For this reason we give a brief review of the pathological features.

Changes in the mucous membrane of the appendix are often associated with similar lesions in the mucous membrane of the caecum and are doubtless often dependent upon them.

In other cases we recognize as a first step some abrasion or ulceration of the mucous membrane of the appendix through which micro-organisms make their way into the adenoid tissues and to the peritoneum. The tissue destroyed by this invasion may be limited in depth, width, or length, a very small area may be involved or the whole organ may become gangrenous.

Invasion of the peritoneum causes either a localized septic perri-appendicitis, or general septic peritonitis owing to the rapidity of the infection. Perforation and extravasation result from the sloughing of the necrotic area. The opening is generally larger on the inside of the appendix than on the outside. It is possible that the necrotic process may be limited to the mucous and adenoid layers, but the almost invariable rule is that all the layers are involved. Frequently this process goes on without any symptons whatever until the peritoneal coat becomes affected, then the very first symptom in many cases is caused by an infection of the peritoneum, which may be all the way from a minute slow local invasion to a rapid and extensive fecal extravasation and general infection. The course of the prognosis and treatment of the disease depends almost entirely upon the exact seat and size of the perforation in the appendix. When it is situated at the tip of the organ the extravasation is usually slow giving time for exudates to be thrown out and imprison the infectious material and thus localizing the peritonitis, when at or near the base the extravasation and invasion of the infection is so rapid that the peritoneum cannot erect a barrier to the spreading infection in time, and general septic peritonitis, or blood poisoning, takes place. We must remember that the rapidity of the extravasation depends also upon the size of the lumen of the appendix

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and also upon the liquid state of the caecal contents. Now from this statement it can be readily seen that when the perforation is of large size, when its seat is near the base of the appendix and when the lumen of the appendix is large and when the stools are in a liquid state rapid fecal extravasation will result and the infection will be general and if not relieved by prompt operation rapidly fatal.

Before bacteriology became a recognized science surgeons were mainly interested with clinical phenomena.

Now much information can be gained by pathological examination of the blood, and especially is this true in deep-seated abscesses, or suppurations, and in virulent infections.

In all acute suppurative processes in any part of the body the blood taken shows an increase in the number of polyneuclear leucocytes. It matters not from where the blood is taken, either from the affected part, or distant part, the amount of increase is independent of the amount of pus. The increase of leucocytes points to the spread of the infection and may be the only evidence of it. In cases of appendicitis, when pain, tenderness, temperature and pulse rate all subsides, and when the leucocyte count steadily rose, subsequent operation proved the indications as given by the blood to be correct, a chart count should be made and not a single count. It is the rise or fall of the count that enables you to make a proper prognosis and also to select proper time for operation. In cases where pus is finally walled off, or where the bacteria in the pus have become inactive, no leucocytosis is present, which simply shows that no active infection is going on. In fulminating cases of appendicitis of extreme severity, where the patient promptly succumbs to general peritonitis, blood count may be normal. The worst cases of pneumonia and diphtheria show the same condition of the blood, so the very mildest and the very severest cases leucocytosis is absent, wherever there is a hard fight between the infection and the powers of the system leucocytosis is present in ninety (90) out of every one hundred (100) cases. Now if there is

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an overwhelming victory either for the infection or the system there is no increase of the leucocytes. Not only are we able to secure reliable indications for operative interference by blood count, but the progress of case after operation and drainage is established can be accurately interpreted by the chart. If free exit is given to the pus of an abscess the leucocyte count will fall to nearly normal and just as soon as granulation is formed on the fresh incision surfaces the count will be normal and remains so if free drainage is kept up. Now if you disturb the granulations by curretting or probing or even remove sutures the leucocyte count will rise again and this rise is also noticed in stitch hole abscesses, pocketing of pus, etc.

Thus we expect the greatest leucocytosis in the most virulent infections, that are well resisted by the system, a gangrenous appendix will raise the count higher than an abscess containing a quart or two of pus. Then we note that it is not the product of the infection but its virulence and spread or invasion that govern the increase of the leucocytes. An average case of appendicitis shows from 15,000 to 33,000 leucocytes to the cubic mm. Local appendicitis (catarrhal) does not raise the count above 15,000 cmm.

A careful consideration of the modern pathology of appendicitis brings to our minds several important inquiries respecting the medical and surgical management of the disease:—

First. Why is the use of purgatives in appendicitis never justifiable?

Second. In what cases is operative interference unnecessary and unjustifiable?

Third. What is the best method of dealing with the appendix in cases where abscess is present?

Fourth. At what time in the history of each case should we operate?

In answer to the first question we wish to say that when the opening in the appendix is large and situated near the

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caecum (and this cannot be ascertained by noting the spread of the infection in the very incipiency of the case) the use of purgatives, especially saline cathartics, will prove positively injurious, first by increasing peristaltic movement, and second by liquefying the contents of the caecum, both of which will actually contribute to the rapid invasion of the infection. We do not object to emptying of the large intestine by gentle enema, but modern pathology points out the danger in the use of purgatives in appendicitis.

The answer to the second question is neccessarily brief. In chronic lesions of the appendix in which the peritoneal layer is unaffected and no adhesions exist, operative interference is not needed, and is never justifiable. I think the third question is answered properly by stating that in all cases of abscess where the appendix is not readily accessible no attempt should be made to remove it. No extensive search or manipulation should be made in these cases for fear of disturbing the adhesive barrier formed between the abscess and the general cavity of the peritoneum and thereby creating general infection. In all such cases incision, disenfection with simple drainage is attended by the best results. It is difficult for me to understand how a safe or an experienced surgeon can insist upon finding and removing the appendix in every case, and at every period of the attack, in the face of the obstacles mentioned which are well calculated to jeopardize the patient's life. The course of action herein indicated is based upon the observation and the experience of our greatest and most successful surgeons. What weight should be given to a reckless and inconsiderate recommendation occasionally made that in addition to the incision and evacuation of the pus the appendix must be sought for and removed and all adhesions broken up in every case? Such advice, if persistently followed, would in my judgment be far more effective in destroying human life than if the cases were left entirely to nature.

In accordance with the writer's belief that a surgeon should

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present his individual views upon a subject and not annoy the Association with the presentation of everything that has been written or said by others about it. I have taken positions on the questions here discussed somewhat more decided than some of my surgical associates.

WHEN TO OPERATE.

A competent surgical writer says: "Without doubt the best treatment could it be applied in the first hours of the disease would be immediate exploration and removal of the appendix" — which is equivalent to saying — if we knew the person would suffer an attack of appendicitis it would be best to remove the appendix before the attack.

First, when the invasion of the infection is rapid, indicating that the perforation is large and situated near base of appendix, and where the severity of the symptoms presage a general, instead of a local infection, and where the blood count shows the virulence of the infection, and all of these at the very onset of the attack indicating an infection rapidly becoming general, operate at once — and the conditions in a case like this are the only ones demanding an early operation. Hence the statement that every case of appendicitis be operated upon as soon as the diagnosis is made is not supported or approved by those surgeons most experienced and most successful in the management of the disease. It is always desirable to ease the patient if possible, through the attack, with view of removing the appendix in the interval of health, and after recovery without operation from one severe attack the operation should be urged upon the patient and the same advice should be given in every case where the patient has suffered several mild attacks. When the invasion of the infection is slow, when the perforation is small and situated at or near tip of the appendix, when the mildness of the symptoms and the blood count indicates a local infection, delay in operating beyond the third or fourth day is desirable for fear of converting a local into a general infection. That

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this danger is great the observation of experienced surgeons prove. Many a patient that was doing well has had the tide turned against him by injudicious interference at this stage of the disease. Whatever may have been the indications in the early hours of the attack the probable course of the disease can be determined with absolute certainty at the end of the third or fourth day, the infection at this time is successfully localized and in a large number of cases at this time there is an amelioration of both local and constitutional symptoms. In those cases in which the local and constitutional symptoms continue mild, the patient usually recovers from the attack without operation. In other cases, the symptoms continue severe the spread of the infection is indicated by increase of pain, by blood count, board like rigidity of right rectus-abdominis, constant vomiting and high rate of circulation, with the presence of tumor, or at least dullness, indicative of a localized collection of pus, operation is now advisable. We therefore give the following summary in answer to the question: When to operate?

First, in fulminating appendicitis, when the perforation is large and situated near the base of the appendix, when invasion of the infection is rapid, when symptoms are severe, and blood count shows the virulence of the infection, operate in the earlier hours of the attack.

Second, after recovery without operation from a severe attack.

Third, after suffering several mild attacks.

Fourth, after the third or fourth day in cases where blood count, pain, vomiting, and high rate of pulse indicate a spread of the infection, or an increase in its virulence.

My conviction is that the process we call inflammation, or peritonitis, is a conservative process and if I knew the dividing line between the process of repair and destruction, where the one leaves off and the other begins, I might be able to name the very hour in which operation on the last mentioned cases should be done.

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DISCUSSION ON PAPERS BY DRS. MEISENBACH AND FRENCH.

DR. P. Y. TUPPER, of St. Louis: In regard to the determination to remove the appendix I desire simply to say this, and very earnestly to emphasize my personal opinion regarding the matter. Many surgeons will not leave the operating room without the appendix. I am quite satisfied that a search for the appendix in suppurative cases is never warranted. If pus is found, and the abscess cavity freely opened and good drainage established, the whole duty of the surgeon is done, and further search is absolutely harmful. I have heard Dr. Keene, of Philadelphia, say, apropos of this subject, that he would infinitely rather have his man going around with the appendix, as he expressed it, *homo cum appendice*, than have him without the appendix three feet under ground. Very few of these cases have to be operated on a second time. Nine times out of ten the appendix has already sloughed off and with free drainage there is very little to fear.

DR. VAN EMAN: In regard to the rapidity of the stools being a factor in the bad outcome of the case, I wish to offer a little historical evidence. Up to about 1888 and 1889, when the subject of what was known then as typhlitis was largely investigated by a couple of German physicians, the death rate was eighty per cent, under purgatives. These gentlemen instituted a plan of treatment in which opium was the sheet anchor, and in cases under their care at that time and under the care of physicians and surgeons who followed their plan of treatment, which was an opium treatment, keeping the bowels quiet, the percentage fell from eighty per cent to thirty per cent.

DR. J. D. GRIFFITH, Kansas City: It makes a good deal of difference whose bull is being gored sometimes, and when, on the 6th day of March, I received a telegram from Trenton College, New Jersey, that my boy was ill, and I knew that he was perfectly well the day before, I immediately telegraphed Dr. Bull, of New York, asking him to go down and go prepared to operate for acute appendicitis. My son never had an attack of appendicitis or anything simulating it; he never suffered from indigestion that we know of. Dr. Bull went down on Tuesday evening, on the 6th of March, and operated for acute fulminating appendicitis. Gangrene and perforation had already taken place in the pelvis. I have the appendix that Dr. Bull removed, and it was a surprise to me. The boy, fortunately, got well. There was no walling off. I can find no stricture in the appendix which could account for the cutting off of the blood vessels beyond it, and the perforation which had taken place was not at the base of it, but near the extremity, and the spot of gangrene is larger than my little finger, and in its center is the perforation. There was no fecal matter in the appendix at all, but there was that material which we all know when we see it; I do not know what it is — that horrible, vicious, dark-looking fluid, and Dr. Bull told me that if the boy had been left alone until the next morning it would probably have cost him his life. Now, it is easy to say a catarrh of the cecum may lead up to a chronic appendicitis. We know we may have four or five attacks of appendicitis;

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I have had several attacks and still have my appendix. I would like to lose it, but do not like to take the risk just now. If some gentleman would explain for us these fulminating cases — they are the cases that give us 95 per cent of deaths.

DR. J. M. ALLEN, Liberty: The subject of appendicitis is as inexhaustible as the drops of water in the ocean, and if we undertake to exhaust the subject here we may as well close the meeting of the Association with this paper.

Dr. H. C. CROWELL, Kansas City: The matter of examining the blood is a step further than I have been. I recognize that I have been derelict. I have long taken the stand that there is no medical treatment of appendicitis, and if that one fact could be impressed on the general profession, many of the cases that are now dead might be living. The condemnation of the use of opium in the treatment of appendicitis, I believe, is open to a great deal of thought. I am convinced to-day, after the observation of many cases of appendicitis, that rather than use the saline solution, as the usual custom is, we would do much better to use opium. I believe that one of the great advancements that has been made in the last few years was restricting the injection of anything, to check as far as possible the peristalsis; give nature a chance to wall off the infected area, and then, if it becomes necessary, do an operation. You can then do it with a great deal more safety. The doctor has drawn a new picture in regard to the pathology in some degree, and he claims that the pathology of the appendix extends also to the caecum. I have no way of knowing that this is so. I doubt it. It may be true if you claim that it is of catarrhal origin and continuous from the intestinal tract; but I believe from the observation of some cases that most likely the infection is a local one in the cavity of the appendix, and that it is aggravated and inflamed by the swelling and interference with the circulation, and you have there, the same as at any other part of the body, a necrosis from lack of nutrition. I am in great doubt as to the ability of Dr. French or any other surgeon to say where the perforation is or whether a given case is one which will recover or go on to a fatal issue, if left alone. I will say this in extenuation of his statement, as far as I am concerned I have not been using the examination of the blood to determine the presence or absence of leucocytes, and there may be much more in it than I have any knowledge of, and by that means we may be able to say something about the nature of the case and make a diagnosis and prognosis. But as to the exact location of the perforation or whether it is a case that should be tampered with I am in considerable doubt of his ability to say. I have taken the position for a long time that there were a great many of these cases that demanded that we should wait; I have been criticised very severely by those who have had a large number of cases and a low mortality; but there are those cases where we have an abscess in which we should wait until there had been a circumscribed walling off, when we can operate with perfect safety. I have operated on quite a good many cases and it is a long

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time since I have lost one, and, of course, like everybody else, I have gained courage by the fact that I have not lost any. I believe, as the doctor says, that it is bad surgery, always to try to carry away the appendix. The appendix does not do any particular harm if it is left there.

DR. FRENCH: If I have succeeded in attracting the attention of the members to the injurious effects of purgatives, especially those which liquefy the contents of the bowel, and have attracted the attention of the profession to the fact that it is not always necessary when operation is done to remove the appendix, but simply to furnish an outlet for the infectious matter, and to the value of this examination of the blood as a means of prognosis and as indicating a time for the operation, I think I have been well repaid for the time spent in preparing the paper. I may add that I have no bacteriological ability. This work is done for me by Prof. James A. Close of St. Louis and Dr. Jennings and in one case of a medical student where all the symptoms subsided and ameliorated and everything indicated the man was in an improved condition, on the third day he made me four or five examinations of the blood and reported to me by telephone: "You had better operate on that boy, there is a rapid increase of leucocytes," and when I opened the abdomen I found no pus, but I found the secretion which Dr. Griffith tells us about, the little flocculi and I had to leave the case open for drainage for weeks. In another case I had the patient at St. Luke's hospital and we thought the patient was doing well and so informed the patient, when I was informed by the pathologist that the indications pointed to an operation, and the operation proved that the pathologist was correct. I tell you, gentlemen, this matter is of value. Dr. Griffith makes the statement that it is a difficult matter to determine in the very incipiency of these fulminating cases the character or the virulence of the infection. It is for this reason that the blood examination is valuable as indicating to us the virulence of the infection and the rapidity of its spread. I remark in the paper that these little necrotic areoli may be from a little opening and complete the gangrenous infection of the appendix. Again I call attention to the fact that we often find this infectious material around the appendix and it is not recognized. If we close the bowel up we lose our patients.

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MYOMECTOMY DURING THE SIXTH MONTH OF PREGNANCY — RECOVERY.

By Eugene R. Lewis, Kansas City.

As a member of the Committee on Progress of Surgery (Missouri State Medical Society) I have asked the chairman to allow me to present this paper, which contains the report of a successful myomectomy made during the sixth month of gestation, — a successful case of the kind not being on record so far as my knowledge goes — and I have been diligent in my efforts to find a similar case recorded. Finding the books at my command short of the information I desired on this subject, I addressed letters to quite a number of the prominent surgeons and physicians of our State and country, I received several prompt replies, — others yet to hear from, — and of those replying I quote from the letters of Prof. Howard A. Kelly, of Johns Hopkins University; Prof. Nicholas Senn, of Rush Medical College, and Prof. E. E. Montgomery, of Jefferson Medical College, Philadelphia. Prof. Kelly says: "I know of no case of intramural fibroid, *i. e.*, one with a thick capsule of uterine muscle over it, which has been removed in pregnancy without provoking abortion," etc. Prof. Senn says: "I have done many enucleations, but without similar results; the case deserves a permanent place in literature. My enucleations were made on the non-impregnated uterus." Prof. Montgomery says: "It has not been my privilege to operate upon a fibroid intramural variety during pregnancy," etc. It is possible I may yet find that I have not made the first successful myomectomy upon the pregnant uterus, but so far I am proud to be able to claim priority for my native State in this direction. The patient, Mrs. Pauline A, 27

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years of age primipera, was brought to my office in November, 1899, by Dr. S. D. Smith of Cowgill, Mo. I had several examine her with me, and Dr. Smith had others examine her, for her condition seemed to be rapidly growing worse and worse, and her distress called for action quite as much as for sympathy. Myomectomy as described by Howard A. Kelly, of Johns Hopkins University, was performed on the patient November 27, 1899, at the hospital before the class of the Woman's Medical College, assisted by Drs. T. B. Thrush, B. L. Sultzbacher, Nannie P. Lewis and others. The uterus was in the sixth month of gestation, five and one half months (a living child was delivered at full term 104 days after operation). The tumor, as large as a large orange, was situated superior and anterior to the tube on the right side. An incision in the linea alba nine to eleven inches in length was made to allow the extrusion of the entire gravid uterus and its appendages,—the tumor did not involve the Fallopian tube, but stuck out from the uterus like a large knot on a log. The serious complications liable to arise from an effort to remove the solid fibroid tumor were not underestimated, but were weighed well. The rapidly failing health of the patient, the great distention of the abdomen, in fact the congerie of conditions present in the case were rather dazzling, but the relief of the patient was imperative, something must be done and as instantaneously as possible. A mistake in diagnosis had led to the operation. The tumor was supposed to be occupying the tube, and not connected at once to the uterus proper. The child could be plainly felt in motion beneath the thin walls beyond the growth. Realizing the situation, the question was hurriedly raised as to a complete hysterectomy, but as the operations of that character in our knowledge and experience had all proved fatal at this advanced stage of pregnancy, it was interdicted, so but one of two things remained for us to do instantly, either return the entire mass and try to close the abdomen, or try to remove the growth from the wall of the uterus and return what was left.

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I at once made an incision over the dense firm growth about five or six inches in length in the uterine wall, and quite rapidly hulled out the tumor, leaving free hemorhage to contend with at a limited area of the surface exposed, very deep sutures were used to control the bleeding, and the opening in the uterus closed with interrupted sutures; over the outside of this closed incision I placed a strip of iodoform gauze, one end of which I left exposed on closing the abdominal incision. The fourth day I removed this gauze, and on the twenty-eighth day she was allowed to go to her home at Cowgill, Mo., forty-five or fifty miles distant, where she has since been confined at full term, March 11, 1900, just three and one-half months after operation, by Dr. Geo. B. Cowley, who wrote that mother and child were doing well and that delivery had been made without forceps, as I had advised for fear of a rupture of the organ in a prolonged labor. One point I wish to call attention to as regards the relation of the placenta to the tumor, viz.: the placenta seemed to have its attachment immediately beneath the growth, for on all other parts of the uterus it seemed as thin and yielding as a bladder. In fact, the thinness of the walls of the organ was a great surprise to me, and the psychological effect made upon me during the process of manipulation is permanent. There were no points in connection with the convalescence worthy of special mention. The patient's condition seemed to improve continuously after the shock of the operation had passed off. She took chloroform poorly, which was an additional source of uneasiness, but she rallied from same during the first thirty-six hours, after which all was plain sailing, and an uninterrupted recovery followed. May 7th, a little over a week since, a letter from the patient's physician, Dr. Cowley, says: "I saw the baby yesterday, May 5th; about two months old; mother and child well."

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REPORT ON THE PROGRESS OF GYNECOLOGY.

By H. C. Crowell, Kansas City, Mo.

A Cursory Review of Trachelorrhaphy and Perineorrhaphy. — It is not my purpose at this time to enter into minute details in regard to pathology, etiology, symptomatology, or mechanical technic, but to deal rather in generalities. In doing so, I desire to preface all I may say in this connection by according to Emmet full credit for all he has done, which has been enough to make his name synonymous with the operations now under consideration. Yet while I would give ample credit, I reserve the right to express those convictions which have come to me as the result of experience and observation.

TRACHELORRHAPHY.

Laceration of the cervix uteri is one of the very common injuries which the physician meets, and of itself needs no description. That it is some times overlooked, after the explicit descriptions that have been given by Emmet, who first wrote systemetically on the subject, seems almost incredible; such, however, is claimed by some to be the case. It certainly cannot be the tear itself that is overlooked, but the complications which obtain as a result of the laceration, or, at least, with that as a predisposing cause. It was a more nearly universal practice to restore minor lacerations soon after Emmet wrote on the subject than now. Gynecologists of to-day consider minor scars of little or no consequence, while those of a greater degree engage their attention, even more now than then, on account of their both local and general effect. It is generally recognized that well-marked lacerations

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predispose patients to the development of carcinoma. On this account, largely, are trachelorrhaphies performed; as well as to relieve the subjective symptoms such as backache, dragging sensations, pains in the limbs, etc.

Incomplete "cures" have been so frequent following ordinary trachelorrhaphy, as commonly done, that the question has suggested itself to me, whether trachelorrhaphy, as a universal remedy, is the best or as complete in effecting the desired result as we might desire. In order to answer these questions I have found it convenient to study the pathology which results from a laceration of the cervix uteri. Passing over the primary conditions following laceration, we observe the gaping and eversion with exposure of the lips of the cervix to an irritation as they rub over the vaginal walls, exposed constantly to the contact of infective germs, serving to maintain and aggravate cell activity and tissue change.

A certain amount of healing by granulation takes place in the angles of the wound, leaving a fibrous scar tissue as an irritant, the supposed factor in producing remote subjective symptoms. Besides these changes, we observe the eversion of the cervical mucous surface, and an extension of the same on to the vaginal aspect of the cervix. This mucous surface is made up of racemose glandular tissue which secretes an abundance of heavy tenacious mucus. These glands are but a reduplication, a dipping down into the tissues of the mucous membrane. With the excessive swelling and areolar hyperplasia, the glands possess a considerable depth, comparatively speaking, and if infected, as is so often the case, are not easily brought to a healthy state by the local application of medicines, the curette, or caustic.

Trachelorrhaphy does not remove the diseased glands perfectly, and hence but a partial cure of a case so treated. These are the cases that, following a trachelorrhaphy, continue to have a leucorrhea and many of the subjective symptoms. Another class of these cases that is not satisfactorily treated by trachelorrhaphy is that in which the cervix is torn in more

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than two places, the "stellate laceration," as it is termed, with an abundance (as there must be) of cicatricial tissue. What shall we do to secure more satisfactory results? The remedy has already been given us. I have nothing new to offer. I simply desire to emphasize, if I may, the advantages which the Shroeder operation, or a modification of it, removing more cervical tissue, possesses over the Emmet in quite a large per cent of cases, such as we now subject to operation. Although this procedure has not been generally accepted, I am convinced that it has its field of usefulness as well as has the Emmet operation in such cases as I have mentioned.

It has been claimed by some that the results were not good, inasmuch as it interferes with the cervical canal, causing partial occlusion, and thus interfering with menstruation and impregnation. When properly done, I do not think this objection obtains. To my mind, it has the advantage, in that it removes all diseased mucous surface. No prolonged local treatment to cure the erosion is necessary prior to operation. Any infected Nabothian follicles are removed at once. Clean, healthy wound surfaces are secured, which heal, when brought together by primary intention. Any scar tissue existing can as well be removed by this operation as by the Emmet, The chronic thickening so often found in these cases, when presenting for operation, resulting from long deferred attention of the proper sort, is completely removed, and a soft, pliable cervix substituted, and, moreover, the cervix is slightly shortened from the usual elongated condition, thereby lessening the frequency, and assisting to correct, a very common complication, viz.: retroversion of greater or less degree.

In adverting to the points of excellence which the Schroeder operation presents in a certain class of cases, I do not wish to be understood as in any manner proposing to do away with the recognized Emmet operation of trachelorrhaphy. My object has been simply to urge a greater discrimination in the selection of an operation for our cases.

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PERINEORRHAPHY.

Perineorrhaphy, like trachelorrhaphy, claims Emmet as its principal elaborator, and in that much we claim no error. The error with us, if error there be, consists in this as in many other things (in medicine, religion and politics) we have been content to follow, exercising in no considerable degree our analytical faculties, nor criticising obtained results. Some individual operators have in an apologetic manner, suggested some modification of the Emmet operation, or introduced a practically new method, yet borrowing from Emmet of which to sustain his own.

My endeavor at this time shall be to show, if I may, or at least express my convictions, that there are methods other than the Emmet, which more effectively correct a laceration of the perineum. It is sufficient at this time to say that lacerations of the perineum consist in muscular and tendinous fracture or separation at some point, in some direction, and in some degree, not often symmetrical or uniform, in their occurrence, thus practically making each case a study unto itself; the aim always being to restore as near as may be like parts to like.

The assumption of those who resort to the Emmet operation is the same, but, taking for example, a case of incomplete laceration, what is the effort made at restoration? A mucous denudation of great care is effected in the butterfly shape, as it has been termed, but shape has nothing to do in the efficacy of the denudation; the point I desire to make is that it is a superficial mucous denudation, not to a sufficient degree encompassing the injured structures, simply uncovering them of their protective membrane — not getting down into the scar tissue and liberating those structures that have taken new attachments in abnormal positions, thus causing deformities which call for the operation. When the sutures are introduced, the denuded surface is simply folded in and the borders of mucous tissues forming the boundaries of the denudation are

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brought together. The result is, no new muscular attachments or surfaces are brought together in such a way as to form an enduring strong wound. We have simply folded over aponeurotic surfaces upon themselves. If so, no strong union can have been effected. The tendency is for a stretching or giving down to supervene at no very distant time.

The fundamental principle of wound repair where strength is desired, has been ignored. This is the observation I have made with patients upon whom I have done the Emmet operation, and I find that I am not alone in such observations. In view of such conclusions, I have set about to find a method which should give me better and more satisfactory results. I have found that any plan which seeks to get at the torn area or retracted structures is the most likely to secure the best results. Practically, I think the flap-splitting methods the best in the largest number of cases, or what I think a better term than flap-splitting is a dissection of the parts injured. When it is done, the parts may be brought together in almost their natural position, a position best calculated to bring about the desired results. This can be best accomplished by buried sutures of catgut or sweeping sutures of silkworm gut; my preference being for the Martin method, closing by layers, or, as they call it, Estages, using the formaline gut slightly chromicized, made by Hollister, of Chicago.

By this method, I feel that I more nearly effect a natural restoration of torn tissues, and produce a more enduring and nearly natural perineum. By this method, I believe good results are more easily obtained than by the Emmet operation, which requires some degree of skill and experience in order to get satisfactory results.

LIGATURES AND SUTURES.

Changes or innovations of whatever nature that seem to be well nigh universal, are strong indications that the prevailing opinion is that such innovations are in the line of progress, a step toward idealism.

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But a few years ago the use of silk was almost universal, and he who used cat-gut was deemed a hazardous innovator, while to-day, he who uses silk for ligating the pedicle or the closing of a wound, is a "back number." To-day, cat-gut, known to be thoroughly aseptic and safe can be obtained, thus eliminating any fear of resulting sepsis from its use. Its durability is well within the control of the manufacturer of the gut. Its great advantage over silk is that it is absorbed, leaving no source for a protracted infection, open sinus, or any of the many annoyances which have so often arisen from the use of silk. It is not a becoming apology to say that if the silk is used aseptically and properly, no harm will come from it. Unhappy results have too often come to those of known perfected technique. It is no uncommon thing now to witness operations of various kinds all day in our large clinics, and never see anything but cat-gut used. Fine silk is still recommended in intestinal work, but not in hardly any other place. Even in appendicitis, it is seldom used by most progressive operators. There are many forms of catgut that are perfectly reliable in proper hands. The dry preparations are preferred by some, while others prefer some of the wet preparations. The Hollister formaline gut, slightly chromicised, has given me great satisfaction in all places. The necessity of using large sizes of cat-gut has been exploded, and it is now seldom necessary to use larger than a No, 1, 0, and 00. It is probable that fewer stitch hole abscesses will result where the cat-gut is used subcutaneously in closing the wound.

ROUTE OF OPERATION.

For some years there has been quite considerable discussion as to whether to attack diseases of the tubes and ovaries through the abdomen or vagina. With few exceptions, and in well selected cases, it is now deemed safer to go through the abdomen, where the advantage of sight may be had by using the Trendelenburg position now recognized as possess-

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ing many valuable advantages. Not only does the Trendelenburg position facilitate the operation by affording an opportunity of seeing just what is occurring or being done, but it lessens shock by causing the blood to gravitate into the head, and also exposes the intestines less to the air, as well as manipulation, as they are at once crowded back into the upper part of the abdominal cavity, and covered with gauze if need be. That a larger opening is necessary is a mistaken idea. An opening large enough to facilitate the best work should always be employed.

By the use of the Trendelenburg position, the technique of hysterectomy for fibroid tumors has been entirely revolutionized, and the serrenoeud relegated to the past by most operators. Anterior colpotomy, or the removal of diseased tubes through a vaginal opening, possesses advantages. The patient can usually get out quicker. The objectionable abdominal scar is lacking with its dangers of weakening and permitting the formation of a hernia. But not every case can be safely, or as easily operated upon through the vagina. There is more danger to injury to the bladder, though this accident is doubtless due to faulty technique on the part of the operator. In one week's time the patient can leave the bed in greater safety than those operated through the abdomen can at three weeks. Yet it is not probable that the operation can to any degree supplant the abdominal route.

DRAINAGE.

In earlier days it was deemed to be safe and judicious practice to use the drainage tube in almost any case. Even now, with more extended experimentation proving the futility, if not dangers in their use, we find those who continue to introduce them under the old dictum, "When in doubt, drain." Investigation has so enlightened us upon the possibilities of the peritoneum, and the impossibilities of the drainage tube, that it is now well-nigh relegated to the obsolete, and the dictum reversed and made to read: "When in doubt, don't

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drain." Where the glass drain was formerly used, or when tubular drainage is desired, the rubber tube is now more frequently used. The gauze drain has its sphere of usefulness in certain cases, although it does not drain off much fluid. It serves a purpose now better appreciated than when the glass tube was so much used. It is to be used in all cases of parenchymatous hemorrhage, and to wall off infectious areas. After an extensive and varied use of gauze for drainage, or possibly protection, I am convinced that to use it to the greatest advantage, it should, in most instances, be left longer than is a usual custom. For example, in a case where pus had been spilled in the removal of pus tubes, I would fill the pelvic cavity with gauze, leaving a small opening in the abdominal wall, if no vaginal drainage was established, as should be the case in most pus-cases by extirpation of uterus entire. This gauze should be left from five to eight days. When it is removed, a granulation zone has been thrown out, which prevents any great danger from infection. The gauze comes out easily then, without laceration of tissues and pain. Then the cavity remaining can readily be cleaned and kept so until granulation closes the space.

Some have gone even so far as never to drain, and it becomes a difficult task to controvert their position. The general experience of operators is that they drain less and less from their own observations, regardless of the writings of experimenters.

NORMAL SALINE SOLUTIONS.

It is not altogether the big operations, difficult of technic possibly, which indicate all the progress that is being made in medicine and surgery.

The greatly increased use of the saline solutions, and in a vastly greater number of conditions, goes to show that their efficacy is being more understood and appreciated. It possibly will save more lives than all the operations instituted. It is a life-saver in the true sense of the term. Its field of

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usefulness has widened out from that of the treatment of shock and hemorrhage until it is now almost the thing to use when in doubt in a case of depression from whatever cause.

Its use has been promoted more by the gynecolgists than any other class of physicians, and is, therefore, considered in this connection under the head of progress.

Following many operations there is a scanty or suppressed renal secretion. In such cases we have no more potent agent for re-establishing this function. Septic diseases of all kinds are very much benefited by the introduction into the circulation of a pint or more of normal salt solution.

The methods of using are three: (a) Direct intravenous injection, by far the most rapid and efficacious. (b) Hypodermoclysis, the injection under the skin into the thigh, back, breast, etc., a method which has never been satisfactory to me. (c) Rectal injections. By the rectum we effect less than by either of the two other methods, but when there is no very urgent demand for the use of the saline solution, it is easier, and done by a nurse, thus relieving the surgeon.

For the purpose of affording fluids to a patient not allowed, or unable to take fluids by the mouth, and to encourage the action of the kidneys, the rectal route serves every purpose. Too much cannot be said of the usefulness of this comparatively simple therapeutic agent.

And so we might go on looking for evidences of progress in gynecology or any department of medicine, and I believe we should find most of use in the smaller things instead of big operations. This is becoming an age of detail and investigation of minor things and the gain is great.

DISCUSSION ON PAPERS BY DRS. LEWIS AND CROWELL.

DR. HALL: The operation of trachelorraphy as first promulgated by Emmet may perhaps have been abused by others rather than by himself. From all that we have learned by experience with many of the so-called

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operable cases or trachelorraphy, we realize that all cases and degrees of laceration do not require operation. Since we recognized that in surgery one of the greatest considerations with which we had to deal was to insure drainage we have been more careful about repairing these small rents in the cervix. Unquestionably, as Dr. Crowell says, in many of these cases, especially where we have a double laceration of the cervix, a condition of ectropion exists and amputation is the better operation. He speaks of Schroeder's operation. The best operation I have ever tried (and I am sorry that I have had the opportunity to do it but once) is the operation suggested by Henry B. Newman of Chicago, before the Section of Obstetrics and Gynecology of the American Medical Association at Denver, for which he has devised certain instruments especially applicable to these cases. In regard to perineorraphy I think the best minds in the land indorse Emmet's operation.

In regard to sutures in abdominal operations I am very much in favor of silkworm gut using the single through and through stitch rather than buried sutures as the essayist suggests. In regard to catgut we are almost afraid of it, but I know it has been successfully used in New York and Chicago, and I believe in Kansas City; but the silkworm gut is a suture regarding which there can be no question. In closing the abdomen I simply bring it through and through, tying in the regular manner. It has been so satisfactory with me that I see no reason to change.

In regard to the route of operation in genecological work it certainly must appear to all of us that it depends entirely upon what we have to do. In case of abscess or pus sac in the pelvis low down, it certainly can be reached more safely through the vagina. In case of extra-uterine fetation, where we have a rupture, etc., as Dr. Crowell said last night, it is a dangerous procedure to open it by way of the vaginal vault and depend on stopping the bleeding vessels by tamponade. You do not know where you are putting the gauze, or whether you are stopping the hemorrhage; whereas on that kind of work, by opening the abdomen in the median line, going down and exposing the field and clamping the bleeding point, there can be no question about it.

In regard to enucleation of the uterus by total extirpation, or removal by the serre noeud operation, that depends very much upon one's practice. The serre noeud operation does give a large per cent of recoveries — it has been almost one hundred per cent in properly selected cases — and so long as we can get such results as these I see no reason for abandoning it for an operation which is so fatal.

Dr. Emory Lanphear, St. Louis: In regard to the matter of the Schroeder operation, which is claimed to be better than tracheolorrhaphy, I would say that for people who have passed the menopause this is unquestionably correct; but I have always been afraid of the operation for people who are within the possibility of conception. I would like Dr. Crowell to tell us what his experience has been with women who have become pregnant after a Schroeder operation. I have always feared there would be trouble, and

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have therefore done a deep tracheolorrhaphy, removing a large portion of the cervix, bringing the denuded surfaces together and making a cervix which was readily dilatable.

For more than ten years I have not used a piece of silk save in sewing the mucosa in intestinal operations. Nearly eight years ago I made a series of 100 operations covering all kinds of surgery, with catgut, and published that report; in only three of the 100 cases was there suppuration and those were cases in which the pus germs were already present at the time of the operation, and infection of the operative surfaces had already occurred. This was laughed to scorn, and I was ridiculed; I was called a liar and all other sorts of things, and Dr. Crowell knows by whom. Yet many of the men who saw the work that was being done in the hospitals many years ago by Dr. Binnie and myself have fallen into line just as Dr. Crowell has, and now are in favor of the catgut suture to the exclusion of silk. With formalin gut we can secure the same sterility that we can with silk After breaking the tube if any of the catgut is left over we can place it with the instruments and boil it for the next operation as we do silk. That catgut is then absolutely sterile, and with our hands prepared as they should be prepared, there is no danger of infection from the catgut.

I must take exception to one item in the report of the essayist, namely, his practical condemnation of anterior colopotomy in purulent inflammations. I do not, however, advocate simple colpotomy for double pus tubes or for extra-uterine abscess for this reason that in the majority of cases both of the tubes are infected, demanding imperatively the removal of both of the tubes. I hold that when it is necessary to remove both the tubes, the gynecologist is derelict in his duty if he does not also remove the uterus, because the uterus now is recognized by physiologists as not the primary organ of the woman but as the appendage to the ovaries. I have come to the conclusion, as a result of my work, as compared with abdominal section in the same class of cases, that the vaginal route is far preferable and is the operation to be chosen in the future. If in attempting to make a vaginal celiotomy for pus tube I found that after splitting the uterus and attempting to draw down the infected areas that the adhesions are such as to render it impossible to see as well as to feel every step of the procedure, I would pack the part with gauze, place the patient in the von Trendelenburg position and complete the operation from above, close the abdominal incision and drain from below. But in the large proportion of these cases it is possible to draw the infected areas, with their adhesions, down into the field of operation, where a man can see, as well as feel and do an extravulvar operation in toto and by so doing we have accomplished all we could do from above and we have gained greatly in obtaining ideal drainage, and consequently in putting the patient in such position that convalescence is rapid and perfect and satisfactory to the patient. I will make a vaginal operation for pus tube and have my patient back to work by the time Dr. Crowell has taken out the stitches in his operation from above. Now we know that this is the history of the vaginal operations, and it does not seem

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to me that the essayist is warranted in condemning it as thoroughly as he does.

DR. H. C. CROWELL: In dealing with conditions of the ovary and tube where we would not remove the uterus, we would simply go in under the bladder and over the uterus, and perhaps remove one tube, remove a cyst and leave the ovary or part of the ovary, which I think should be done if we can. But where you have pus tubes on both sides and extensive peritonitis, which has existed with general adhesions, Dr. Lanphear has become exceedingly expert if he can do that as well through the vagina as through the abdominal wall, because you cannot get the gauze up there back of it; there are adhesions all around and you cannot get down to it; and I do not think that it will, in any great degree, supplant the operation through the abdomen; although where we can do it, it is far superior in point of excellence for the patient. But, if I am not mistaken, in looking over the literature, we find those who were most ardent in recommending this anterior colopotomy and doing the operation through the vagina are now re-advocating their former opinions and coming back to the abdominal route. And even men of great experience say they will not do another hysteretchtomy through the vagina, even for cancer, but will go through the abdomen.

DR. DORSETT: What is your idea or opinion in regard to the advisability of taking out the uterus through the vagina where it is necessary to remove the tubes through the vagina in pus-infected cases?

DR. CROWELL: I think in regard to that as I do in regard to many other things — that the whole thing rests upon the judgment and experience of the surgeon. If we have a uterus that is infected, I think it should come out with the tubes; but if the uterus is in a comparatively healthy state, although useless, I think it is better to leave it in place, because the vagina is best maintained that way, and I do not think any probable injury comes from leaving it.

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ARE EMERGENCIES FULLY ANTICIPATED IN OBSTETRICAL PRACTICE?

By C. A. Dannaker, Kansas City, Mo.

To many medical men there is nothing new in obstetrics. They have never lost a case, never had any complications, no nervous phenomena, no lacerations, and have not used the forceps, not even having a slow recovery from the maternity bed. How is it that those of us that have opportunities of hospital experience, see, day after day, cases of broken-down nervous and physical wrecks? That those same patients will tell you they enjoyed the best of health before marriage, and we know that this statement is true. Who is the fault, the physician or husband? I wish to make the statement that the doctor is very often the one to blame.

The seminaries are doing good work; they are teaching physiology in its broadest sense; they teach that diseases follow consequences; they decline to allow the students to exercise their muscular system promiscuously, as it may be termed, in the gymnasium, but by measuring and detail work, are taught what portion of the system is deficient, and by these means are the type of American women developed by outdoor exercises, proper diet, proper regulations in regard to dressing, that is grand in its attainments. Are the medical men keeping in touch with these physical directors? No. The greater portion of the medical profession are not giving to this study, of this developing character of the American woman, all that is necessary to make her the mother of the greater composite race that the sun shines on. What is required of the medical man? He should be a physical diagnostician in the fullest sense of the term; one when consulted

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by the mother of the bride, or by the woman who is to carry out God's word, to produce and multiply. What answer, from a scientific standpoint, is the average physician capable of satisfying this inquiring mind? Is this woman absolutely healthy, and to become a mother is a natural physiological act? If all is well when you have satisfied this woman and she leaves you, have you so impressed her with the importance of both objective and subjective symptoms, that if an emergency arises she can interpret them quickly, so that you can be called? Have you the scientific attainments to impress her with your knowledge of the use of instruments, surgical, scientific, and the use of chemicals? Remember the sad case that you read of, but does not occur in your practice.

Gentlemen, I have had sad cases, and very few but are capable of the explanation that details were not carried out; the emergencies arose and they were not met at the proper time and proper manner. Are we to criticise when we live in glass houses? I, for one, stand in sublime admiration for a properly trained physician, seconded by an intelligent trained nurse. How many lives are saved? How many homes blessed with cheerful mothers — wives who have hovered over the grave? But the physician, like the North Star, having true scientific attainments, the physical diagnostician, having his forces properly instructed to meet emergencies — with what confidence he can assure husband and friends that everything that art and science can do is being brought to bear to relieve that home from the dark clouds that are hovering over it?

If this paper has but one effect — to call your attention to the closer observation of symptoms and one life thus saved — this paper has accomplished its purpose. This subject is of such momentous weight that many practitioners have lost sight of certain symptoms that, if they were early recognized, would save them anxiety and possible death. The true obstetrician must be an all-round practitioner, a very rare article to-day; one when he is consulted by the coming mother, who

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asking very leading questions and must have logical answers; or if postponed with that air of importance, how quickly that suffering woman loses confidence in the medical profession. How many of the subjective symptoms that the pregnant woman complains of could be relieved if the attending physician could work with the microscope and intelligently interpret what he sees in the microscopical field; but no, that work is tedious, and it does not pay, but if one of you could look back to just one case that if you could have foreseen the results, and have anticipated the fatal outcome by knowing intelligently what those symptoms were leading up to, and could have used the art and science of therapeutics to relieve those symptoms that, although they did not prove fatal, they gave such unmistakable symptoms of nervous shock, such as blindness, headache, dropsical symptoms or convulsions that are so easily recognized and quickly relieved, that, to one who has traced them from the beginning, it appears hardly possible that this was the result of auto-inoculation, ending in puerperal convulsions or puerperal insanity. Let me give you two examples: —

Mrs. ——, age 20; multipara; first pregnancy passed off without any complications. In her second pregnancy she came under my care. Her health good, a strong farmer's wife, a hard worker, one that is generally active in every respect. At the fifth month of pregnancy she made my acquaintance and the first symptoms complained of was basilar headache; the first question asked, was she constipated; her answer, no; but on questioning closely, it was found that her bowels moved, but not satisfactorily, once or twice daily; her secretions sluggish; no doubt the headache and nausea complained of were due to this want of functional activity; her urine was examined and the sp. gr. 1012, acid reaction, but no trace of albumen found at any time, but a very pronounced condition of defective elimination of urea, low as 1/10 of 1 per cent. The treatment was simple and effective, small doses of calomel and followed by saline cathartics,

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whenever the bowels did not move twice daily. Observe the simple treatment and what splendid results.

Case number two. Mrs. Y.; age, 23; primipara; healthy and strong; constipated; no headache; no particular subjective symptoms; indolent in regard to active exercise. Obtained a sample of urine; on examination, color red, sp. gr. 1025; no sugar; no albumen; urea 2 per cent, showing by calculations a deficit of urea of gr. 150 per 24 hours. Microscope shows granular casts, no pus cells; suggested calomel and saline cathartics. Explained to husband and wife that there were certain indications of great care, to be followed both during and after confinement. I did not hear anything further from the cases but saw notice in the daily paper, "Death: puerperal insanity." Could any of us tell anything without analysis of the urine, and closely following the urea test and the use of the microscope. So many persons will tell you that diet alone will correct this defect in the secretions; one of these cases was under my care at the hospital and diet alone cut no figure. To relieve these subjective symptoms, I tried it; in the other I did not have any say after the first interview. I wish to make this statement, that there are more diseases arising from auto-intoxication than the average physician will recognize, or will confess. Why is it that in hospital practice and in consultation purgatives and the hot-pack give such positive results? Only because observations repeated all along the clinical line will bear me out. If I can make but one impression, and that is, if the subjective symptoms of all cases that are obscure are not relieved by the ordinary remedies recommended, a good sweat pack, not a Turkish bath, which soon becomes a fad, but when the rest after the sweating is so essential, on account of the great relief to the internal congestion and to the elimination of the by-products that are poisonous to the system that we so little understand, but no doubt from the standpoint of physical diagnosis, will give us so many clues to diseases, that Haig has the profound thanks of the profession,

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although we doubt that uric acid is the sole cause. What has given better results when on the detection of fever you immediately use vaginal douche, not waiting for the thermometer to tell what to do, but to anticipate the emergency? Use douche always after delivery to assist nature in removing the debris of the decidua and the results of lacerations of the os and mucous membrane of the vagina. So many physicians are afraid of douching. Are they afraid to wash an external wound properly? How much more important to clean out the hot-bed of infection. By this simple anticipation of trouble, you may avoid slow recovery from the maternity bed. I don't recommend strong solutions, but $\frac{1}{6000}$ bichloride or $\frac{1}{4}$ of 1% carbolic acid, same of lysol or $\frac{1}{2}$ of 1% salt solution, never under any circumstances neglecting the proper application of the occlusion pad, which is so essential, so as to keep out what is in the atmosphere. At our college clinic it is astonishing what can be done by the above methods, even when the environments are a disgrace to the twentieth century. There is one complication, when it occurs in one's practice, gives our patients most acute suffering, and is a reproach to our want of anticipation, that is mastitis. There is no reason that an abscess of the breast should take place, when from the death of the child, or sore nipple, or from any causes, mastitis should not take place; the remedy is massage with saline cathartics; massage not for a few moments, but by the hour, properly done, repeated two, three or four times in twelve hours, will, in the course of three days, give such splendid results, that when one has observed its results, he will never depend on any other means, "cleanliness" being the watchword. In all cases when the child's head fails to rotate beneath the symphysis and the presenting part does not descend or react, do not think that forceps are immediately indicated. If, on close study, you find the parietal eminence lodge or impeded on the descending rami of the pubis, place your patient under the influence of chloroform and, introducing your hand, try to rotate the occiput or presenting part beneath the sym-

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physis, and often you will have the great satisfaction of the presenting parts descending without instrumental interference; try it, and you will have good results.

One of the complications that result from not anticipating the final delivery of the head and shoulders into the world, is that at the last moment, when the labor pains are at their maximum, you will try and restrain the head by your dexterity; this really amounts to nothing, but on the contrary you command the patient to open her mouth; you immediately relieve the pressure of the abdominal and diaphragmatic muscles, and then the force can be controlled at this very important period, saving the posterior commissures and perineal body. One of the most important remedies that has come to the front, that every physician should have convenient in case of shocks, no matter what the origin may be, is spirits of camphor, to be given in full hypodermic doses, full contents of barrel of the syringe placed beneath the skin. It acts so much quicker than strychnine, the results manifested by deep breathing, full pulse, a pink glow to the countenance, that it acts as a stimulant, that it will give you satisfaction of production, quicker reaction, and give you time for other well known remedies to act.

DISCUSSION ON DR. DANNEKER'S PAPER.

DR. VAN EMAN, Kansas City: The doctor is not to blame for many of the results that follow parturition; the results cannot be ascribed entirely to what occurred within twenty-four hours in the case of labor itself, but to condition out of which the condition of the girl has arisen, and conditions under which her mother and grandmother before her have lived. Now, while it is true that in the gymnasiums of our schools and colleges a great deal of attention is paid to-day to the development of the physical part of a woman, she is developed for show. When we select the brood mare to raise colts, we do not select one that is pretty in form, but one that is strong. Woman is a victim largely of her environments, and I want to say right here that the woman who has the advantages of the gymnasium and training for the making of a perfect animal — a perfect woman, is not the woman that has the babies. She usually has one if she marries and that is the end of it; she finds out what kind of an affair it is and she gets too smart to have any

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more. It is an old saying: A fool for luck, a negro for dogs, and a poor man for children. Now, a girl in one of these better families, until the beginning of puberty her physical development is allowed to go on unassisted, but the moment that she begins to show evidences of puberty she gets a corset — her clothing is changed, and she is reproved for being natural; she has to be a woman before she has even been a girl. She goes through the ward school and is sent to the high school; she runs up and downstairs. no attention is paid to the fact that she is about to become a woman; that the first great crisis in her life is coming on, and she goes to school during her first menstruation and every other menstruation, and lays right there, from faulty training and teaching, the foundation for trouble when she has her first child.

Another point. It is considered among the masses of the people that to have children — that labor, is a very ordinary affair; that pregnancy is an ordinary thing. The young woman does not go to the doctor during her pregnancy, in fact, she hardly selects her doctor until she is about to be confined, and ordinarily, unless the physician takes the matter in hand himself, about the first intimation he has that the woman is about to have a child — unless perhaps something comes up that the old women in the neighborhood do not understand — is the call to the house when she is in labor. They do not go to the doctor for two reasons: this is a new condition to the woman and being modest and trained that way she thinks the headaches and swollen feet are natural results of her condition. Another reason is that it costs something; in the later stages the patient cannot well go to the doctor and to send for him costs still more. The result is that she comes to her first confinement without any treatment. She may have greased the parts with a little sweet oil or something of that kind under the advice of some old woman; she may or may not have kept her bowels open. Somebody has defined a woman as an animal with constipated bowels; and a woman who is pregnant is twice as apt to be that way than before. Now this trouble in parturition goes back through the girl's whole life and if we want to have perfect women somebody else has to do the work besides the doctor.

In regard to the care of the woman during labor, there is no doubt that after the doctor is called in he can do a great deal, and there are three classes of practitioners, first is the one who sits in an adjoining room and reads the papers until he is called in; then there is the man who sits continually beside the bed with his finger in the vagina watching things, and one of these is just about as much of a nuisance as the other; one is meddlesome midwifery and the other is no midwifery at all. The third class is between these two extremes, by far the best. It is a very unpleasant thing for the doctor and patient to have a twin labor, one from the vagina and the other from the rectum — which will invariably happen unless you have told the woman what to do and seen that it has been done. And if the bowels have not been emptied at the time labor commences, they should be cleared out with warm injections of water.

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Then one mistake that many doctors make is in being in too much hurry to rush the thing through and go some place else. She is given ergot. I am afraid to give it where there is a rigid perineum. Then he is in such a great hurry to get away that he delivers the placenta and is not careful to remove all the membranes, and this is a source of infection. That is a very common mistake. Then he washes his hands and goes away in a hurry, saying: If everything does not go right let me know. He makes no other visit until perhaps the third or fourth day, for the reason that he cannot lose his time without being paid for it. I do not think that any department of medicine pays so poorly for the amount of service that is expected and rendered and which ought to be rendered as obstetrics.

One of the points that the doctor neglected to mention is the fact that the doctor must be just as clean as the woman; if he has dirty finger nails in the morning and does not clean them before attending his case, he imperils the life of the woman. Then, too, some physicians, if everything seems to be right, content themselves with a very slight examination of the genitals instead of uncovering the woman and cleaning her up, separating the labiae and exposing the vaginal and rectal walls everywhere to see if they are torn.

The doctor advocates very strongly the use of douches as a preventive measure. There is where I take issue with him. I understand from my reading that among the women of savage tribes, where the genitals, by reason of prejudice, are not allowed to be touched — where even the woman who waits on the parturient woman, never puts her fingers in the vagina, puerperal septicemia is very rare, yet there are no women on earth who are surrounded by a greater amount of dirt than the savages — the Sioux for instance or the Apaches. Now what is the explanation of this? Because there is no meddling from the outside. While it is possible that there may be an auto-infection, I think the greater part of our infections are gotten not from within the woman herself, but from the outside. I believe in immediate repair of the torn perineum. If it does not heal, you have lost nothing; if it does you have made a long step towards turning that woman back to her husband as near a perfect woman as she can be. The lochia which comes on after confinement is not a pathologic fluid unless it is made so by the introduction into it from without or within of some microbe — of some streptococcus or staphylococcus or something of that kind. Nature does not make many mistakes and we find that every woman has this lochia to a greater or less extent after her delivery. Now that lochial discharge protects the parts, and unless there is a reason for it I do not know why we should interfere with that flow by douches.

Now the child's head is sometimes caught between the bones on the sides and in passing between, through the superior strait, sometimes makes labor very tedious. Some years ago some gentlemen in Kansas City made some investigations as to the different diameters of the new born child and we found that the average diameter of the head of the average Kansas City child — was considerably larger than the head described and measured by the

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old obstetricians; but there has not been any corresponding development of the pelvis, nor any corresponding development of the muscles of the American woman to force the child out, consequently you have a disparity between the size of the head and the pelvis and between the expulsive force and the resistance met with and the head passes with difficulty.

A great deal of trouble with the breasts arises from neglect. The girl's mother prevents her from consulting a doctor about them and it is only by accident that the family physician ever sees the mammae of a young woman. But she marries and comes to her first confinement and then the doctor examines the nipple and in a great many cases he will find it in a very poor condition; the nipple, instead of standing out boldly and providing a good hold for the child, is pushed in so that there is about as much nipple as there is on the side of a bottle and it is impossible for the child to nurse. Then another point. If the breasts are not properly looked after they may serve as a location for inflammatory action; the efforts of the child and the nurse and parents to get milk out of the breast results in a fissure and let that crack be ever so small some streptococci or staphylococci effect an entrance through the point and the next thing the young woman knows there is a swelling of the breast. The doctor is not to blame for that; it is the fault of the education of the woman herself. So I say the education should go back to the early life of the girl.

Dr. Kuhn, Kansas City: I believe that women, to-day, under the proper physical training that they undergo, are more capable of producing intelligent children, than the Sioux or the ancient Greeks or Hindoos. I am a decided believer in the modern methods of developing physical womanhood; but there is a truth behind it which Dr. Dannaker has called attention to — in regard to the examination of the urine. We all know that as long as the egesta are in proportion to the ingesta, we have a healthy body. Now we speak of convulsions; we speak of albuminuria or eclampsia. What is the cause of it? Why is there a deficiency of urea? Why is there an excess of uric acid? Why puerperal mania? Those are the questions which we must answer in order to prepare for the treatment before the emergency arises, long before the child is born. Now we all know that a mother must have a certain kind of food just the same as we do. We eat so much each day; we inhale so much oxygen, and we know that the egesta, especially through the kidneys and bowels, depend upon the amount and kind of food we eat and oxygen we inhale. Now, when you come to a pregnant woman, six months advanced, you have placed within her a being that demands food also, and demands oxygen. Now she must have a food supply, both the oxygen and carbo-hydrates, and the moment the one or other is deficient you have a deficiency in the organism which affects the development of the child. I do not believe much in uremic convulsions. I do not think urea has anything to do with it, nor uric acid. We take in an average of 15 cubic inches of pure oxygen every 24 hours. Now a woman that is pregnant requires at least one third more. If she does not get it, then the food that she eats is not fully oxidized, and the result is she is being paralyzed. The same thing

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is demanded of the digestive functions. Whenever you have a poor digestion you have a deficient metabolism. We all recognize the fact that urea comes from one source and uric acid from another. But what is it that causes this mischief, the swelling of the feet, nephritis? It is not Bright's disease. There is probably no albumen, but there are tube-casts. It is the poisonous compounds that arise from the perverted metabolism in the stomach, in the intestines, in the blood.

DR. DANNAKER: I just want to say that as a teacher of obstetrics in Kansas City I found that I did not have an opportunity of following up the cases that came to the clinic, so that I could investigate them thoroughly and work from a scientific standpoint and follow up all these obscure symptoms, so through the kindness of the profession of Kansas City there has been a hospital established where these cases have been taken and observed very closely, and in which they have been taken care of. I started out with the idea that all cases of pregnancy had nephritis. I have gotten over that, and that was what started or led up to my investigations in regard to it. I know my old friends in Kansas City talk of uric acid and urea and all that, but nevertheless just as I have been investigating along that line, I think there is an auto-infection or auto-inoculation coming from the absorption of something in the system, the products of which I do not know exactly. I know they are there from a clinical standpoint by watching their effects. You can overcome it by making the woman drink at least fifty ounces of water a day; see that her bowels are kept open, give her a vegetable diet with plenty of exercise and by such measures I have not had a fatal case or a complicated case for the past three years. In regard to douching, I will say I take no chances. I apply a pad to the vulva and use the douche. Before labor I have the woman take a bath and see that the bowels are thoroughly opened.

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SHALL THE SPECIALIST PAY A COMMISSION TO THE GENERAL PRACTITIONER?

EMORY LANPHEAR, ST. LOUIS, MO.

There is no better illustration of the oft-quoted expression: "Tempora mutantur et nos mutamur in illis," than in the relation between the specialist and the general practitioner. Something like a half century ago, when the Code of Ethics of the American Medical Association was in process of formulation modern specialism was in its infancy — indeed practically unborn. Therefore, in the much-mentioned, little-read and often-violated "code" there is but slight mention, even by inference, of the relation which should exist between the common doctor and the specialist.

There are a number of "amendments" to the code which ought to be adopted, chief among them being some carefully prepared rules for the guidance of both physician and specialist, so that by mistaken ideas of ethical conduct, common decency and business methods, no injustice shall be done to the patient, to the family doctor or to the more or less celebrated specialist — who in numerous instances has practically pauperized the one and mortally offended the other to his own aggrandizement.

Quite a large number of specialists, some of them men of national reputation, recognizing the financial loss of the family doctor in (conscientiously) taking his patient to a specialist instead of perhaps blundering through the case alone in order not to lose the fees, with often dire results — and no doubt not entirely oblivious to the pecuniary advantages to be derived therefrom — have more or less openly offered a "commission" to all doctors who bring patients to them. So far,

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in fact, has this been carried of late that some have brazenly advertised for the business, as in the following card, which appears in a medical journal published in Wisconsin: —

> DOCTOR:
> Why not send your Gynecological patient to a doctor who will pay you percentage? For particulars, address
> BOX————,
> MILWAUKEE, WIS.

Now, while there is nothing in the written code of medical ethics which condemns such methods as this, it is certainly a violation of the unwritten law of our professional etiquette — a wrong application of a good principle, perhaps. If the spirit of commercialism is to so completely annihilate all ethical ideas as to place the business of the specialist upon a basis of high commissions rather than of professional ability, the sooner we all turn into "newspaper quacks" the earlier will a healthy reaction come. For it cannot be denied, truthfully, that the plan of paying a regular (or rather "irregular") commission if logically carried to its sequence, would result deplorably to all concerned, viz.: very soon the least competent operators and other specialists would offer the highest commissions and secure the business of avaricious physicians or those not familiar with their results; better men would have to "compete" or starve; and the ultimate end of it all would be disastrous, dishonorable, disgraceful so far as the medical profession is concerned, not to mention the frightful disaster to life and limb of the victims — a veritable "slaughter of the innocents." The evil is therefore a menacing one: and already of alarming degree. Such "bargain-counter" methods cannot be too strongly condemned.

To the broad question: "Shall commissions be paid for business sent to the specialist?" there can be but one ethical answer — NO! and it cannot be made too emphatic.

But must we then condemn, unheard, the men who have adopted the commission plan and found it so successful? May

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not their methods be based upon a principle of justice, of right, of honor, merely misapplied? There is some apparent truth in the assertion of some of these conscientious specialists (and among them there are men who are honorable, who have followed this plan from pure, not mercenary motives) that the "commission plan" is based upon true ethical as well as business principles; and many of them claim to have made its application universal instead of individual — or circumstantial — simply because (a) there are no accepted rules adopted by State or national societies for their guidance, (b) without such a commission, or division of the fee, a great injustice would often be done to the general practitioner, (c) if one doctor learned that something had been given to another and nothing to him, there would be gross offense — the circumstances not being understood. After a most careful, thorough, long-continued study of the equities involved in the subject, I became convinced that the fundamental principle upon which their practice is built is essentially a pure one (viewed from the standpoint of one who has been a general practitioner for a full decade, and a specialist for a similar period of time); but the application is faulty and decidedly objectionable.

Let us calmly, with unprejudiced eye, view the position in which we stand.

It must, first of all, be admitted that the extent of modern medical knowledge is so great that "no small head could hold it all." No matter what the education, ability, and experience of the twentieth century doctor may be, there must of very necessity be cases beyond his skill which he, if earnestly devoted to the welfare of his patrons, must send to one who limits his work to some particular field, thus acquiring greater skill and judgment than the average man can possibly attain. If this man finds such a patient it is nothing but right that he shall send him to a specialist, with a letter explaining previous condition and treatment, ability to pay, etc.; and that the specialist shall do the best he can for him, accept the fee and

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thank the doctor — returning the patient to his usual family attendant at the earliest possible moment; not taking the general practice of the man's family himself, nor turning it to some friend. This is the ideal relation between specialist and doctor, where the specialist for the time assumes sole charge, and the whole responsibility. There should be no "commission" paid in such a case; no "division of the fee" mentioned.

Nor should there be when the specialist is called in "consultation." Then he goes to the patient with the doctor, makes his examination, gives his opinion and advice to the attendant, receives his honorarium, and leaves the case to the family doctor. Here also it would be the height of absurdity to offer or to ask a division of the consultant's fee. Only dishonest, disreputable men would think of such a thing. So on general principles it may be at once said, and should be universally accepted, that for "referring a case" and for "consultations" it is not ethical nor honest to accept or offer a "commission."

Thus far I believe all honorable physicians will agree with me.

Believing, however, as already intimated, that there are circumstances under which a "division of the fee" — not a "commission," there is a vast difference between them, as will be seen by careful examination — is justifiable, I prepared a paper entitled "Shall the Specialist Divide the Fee with the General Practitioner?" citing a number of circumstances under which such a procedure would be proper, and read it before the St. Louis Academy of Medical and Surgical Sciences. Desirous of ascertaining the general sentiment of the medical profession of the country, I sent a copy to teachers in medical schools in every part of the country, and some 3,000 copies to physicians of the West, requesting an expression of opinion. I underlined two sentences of note — the first, following my strong condemnation of the payment of a commission for any patient sent to a specialist, regardless of

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circumstances, being: "But a division of the fee is not only proper, it oftentimes is imperative, if an injustice is not to be done the family doctor;" the second, following citation of some instances in which it certainly could not be regarded as dishonorable being: "I maintain it is the duty of every specialist to ascertain whether or not the regular attendant has already been, or will be, paid sufficiently well for services rendered; if not — then to divide the proceeds equitably."

As an illustration of the circumstances proper for "division of the fee," the following will suffice: —

When an attorney in a county seat has a client in danger of the penitentiary (whom he might defend successfully, but fears failure) and hence in need of the best of counsel, it is customary for him to seek some eminent lawyer of a great city and request his aid. In so doing does he approach the distinguished gentleman and say: "I have a client accused of ——, who is able to pay $3,000 for his acquittal; will you take the case with me for this sum — leaving me the gratification of having done my professional duty?" By no means! He plainly states: "My patron has $3,000 to pay for his defense; are you willing to take $2,000 of this to join me in securing justice for him?"

Arrangements of this kind are made daily in every large city. Does anyone ever suggest that the country attorney has been guilty of a dishonorable act in thus securing his city brother to do the major part of the work for $2,000, he retaining $1,000 for his services? Would any doctor, sued for $100,000, regard such a transaction as disgraceful, unethical, objectionable if thereby he were saved this sum?

But let the question be one of saving life instead of securing liberty or preventing financial loss — and how different it is!

If a country practitioner have a patient affected with recurrent appendicitis (upon whom he might operate with success, but fears possible failure) with a prospective fee of $600, must he — in order to be "ethical" — write to some city surgeon to come to his help, take all of the $600 and leave

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him merely the satisfaction of a duty well performed, or at best the little sum of money he may receive for a few visits at starvation rates? "Upon what meat doth this our Caesar feed that he hath grown so great?"

Why should not the country doctor plainly say to the specialist: "I have a patient with appendicitis, who is able to pay $600. Will you operate for $400 and allow me $200 for the preparation, after treatment, etc.?" What would be wrong about this? Let Drs. Robt. T. Morris, of New York, and Burnside Foster, of St. Paul, who so vigorously maintain that division of the fee is unethical under any and all circumstances, point out what injustice would thereby be done to (a) the patient, (b) the attending physician, or (c) the eminent surgeon. Why should we not learn a few things from the methods of our most noted lawyers, men who are above suspicion as to purity of motives? Have we not hitherto been too unmindful of the financial interests of ourselves and our professional brothers?

The results from my distribution of reprints were somewhat startling. A few of my enemies (and I rejoice to say that — by reason of my long-continued fight for professional decency in the city of St. Louis, and for the maintenance of the code of ethics by college professors and other great men as well as by "common, every-day doctors" throughout the land — I have not a few) at once concluded that I was "advertising for business" and proceeded to condemn and criticise. In justice to them I will say I believe they did not read the article in its entirety — just as most of them quote liberally from the code of ethics without ever having read it. This I expected. I did not expect that which happened beside this; more than 1,000 letters came in response, and only 18 condemned the position I took! Possibly the other 2,000 did not agree, but considered the matter too insignificant to discuss. I do not. Indeed, I regard it as one of the most important which can be considered by a medical society, and one which, like the question: Is

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"lodge" or "contract practice" justifiable? must soon be settled or it will disrupt the medical associations of the United States now doing such good work. Personally, I regard lodge and contract practice as worse in principle and more demoralizing in results than the "commission of evil."

My intention was to publish the correspondence in full; but it grew to such mammoth proportions that this became impossible. I am, therefore, compelled to give only a few of the most conspicuous letters and some striking extracts from others.

Of the eighteen letters opposing my position, it is noteworthy that a majority of them were from oculists and only three from prominent surgeons (Drs. Bernays, Foster and Morris), the most emphatic being from Dr. Robert T. Morris, of New York, whose views upon the subject have been given very fully in the *Journal of the American Medical Association*. Dr. Burnside Foster, of St. Paul, also strongly condemns division of the fee in toto — without any possible exception the surgeon must "hog" the whole fee and leave the family doctor to sink or swim as he may in the financial stream; his remarks may be found already published in the *St. Paul Medical Journal* — so repetition here is unnecessary. One of the oculists — and the one who most forcefully condemned my conclusions — in a subsequent letter reiterating his bitter condemnation, naively admitted that he himself has been giving a commission on business sent to him, the practice being necessary in order to compete with Chicago! Most of these letters were merely of a condemnatory character, in a general way, the only one worthy of quotation in extenso being the following: —

DIVISION OF THE FEE AS IT APPEARS TO A SOUTHERN COUNTRY DOCTOR.

By W. Shropshire, M. D., Yoakum, Texas.

"The reprint concerning division of the fee came to me some days since, and will take the trouble to answer the inquiry

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thereon, because I feel so sharply the degradation that such measures are calculated to drag the profession into. You take a position that in point of justice to the family physician is possibly right, but recommend a method of procedure that, I fear, will — in fact, can only — lead to reprehensible methods. It is a fact that a family physician should be paid, or at least share what remuneration there is to be had from a patient, but it can be done without fostering such a "patent" road to degradation, by the specialist reducing his fee so that the family physician can collect his own part; or, perhaps, collect for both himself and the specialist. Dollars and cents do not constitute the *sine qua non* of medical practice in most of our opinions, and many of us do operations without any charge that ordinarily are done for considerable fee, simply because we know that the patient is not able to pay for such, and upon the same grounds we charge for an operation that is usually charged $500, for less than a tenth when the patient cannot pay more.

"I feel, Doctor, you are laying yourself liable to severe criticism by men of the best standing in the profession by advocating such a course, even in a paper read before a reputable medical society. I showed your reprint to several, and they said that it was a personal effort on your part to advertise your liberality and induce the general practitioners to send you their special work. If specialists were to resort to such methods the laity would think that to be recommended to go to a specialist would mean to devise a new method of wringing some more money out of them, while as it is they know that it is the purest and most sacrificing motives that cause the family physician to recommend them to go to a specialist, and the family physician himself would soon be considering the per cent that he would get, instead of the capacity of the specialist, only in looking for one to refer his patients to. The code has stood the test of nearly half a century, and to-day stands in higher repute by all creditable members of our profession than it ever did, and the only cases where it has been objected to

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is in some money consideration, the baser end of our noble profession; hence we should stand by it with unflinching fortitude and make the world know that our profession is what it is, the noblest and most self-sacrificing on earth."

This letter is evidently from a man of honest convictions, one whom I must honor for his candor and his plea for following the code of ethics more carefully by everyone, but I feel that the doctor and his friends have simply misunderstood the position I take, and that careful perusal of Dr. Stone's remarks will convince them that in certain instances a division of the fee is not unpardonable.

WHY SHOULD NOT THE DOCTOR EMPLOY AND PAY THE SPECIALIST.

By R. M. Stone, M. D., Omaha, Neb.

"I have read the article on the 'commission' question with much interest.

"All intelligent physicians will agree with you that, 'for referring a case or for a consultation, it is neither ethical nor honest to accept or offer a 'commission.' Why is it not? For the reason that you have done nothing whatever to earn any portion of the fee so received by the specialist. If the doctor is visiting the case at $2.00 a visit, and calls in a consultant who charges $10.00 for his visit, it would be a disgrace for the doctor to hint that he should receive a part of the fee which was five times the normal fee of the doctor in charge. Every one would see that it was dishonest; but the family doctor has a perfect right to charge the family $10.00 for his share of the consulting visit if he wishes to on the ground that it was a visit of unusual importance and requiring much delay and time.

"You state the case of a doctor who calls you to his town to operate, and who is to have the subsequent care of the case and you arrange it by saying to him: 'We take the case together; the fee will be $——; we shall pay the anesthetist

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$——; I shall take two-thirds of the remainder; you shall have the other one-third.' You add that you 'admit that this may not be according to the code,' but still you think it right.

"I have for years held this position, which is in harmony with the code, and with the golden rule, and is perfectly proper. In addition, it places the general practitioner in the proper relation to the surgeon and the case.

"The general practitioner in a city sees a good deal of the work of some particular surgeon; he forms a very favorable opinion of the surgeon's ability as a diagnostician and operator; feels that he is a man of sound judgment, a conservative and safe counsellor; and he decides to have this surgeon do all his operative work when possible. When one of his patients is in need of a surgical procedure, he goes to the surgeon and says: 'I have a patient of —— years, who is worth $——, or has an income of $—— a month as a clerk, who needs an operation for ——. What will you charge me for this operation?'

"The surgeon names his fee, does the operation, charges it to the doctor, who charges the patient whatever he sees fit for the whole case, including prior and subsequent attendance. In this way the doctor receives compensation for all his services, the surgeon for all his, both at a rate established by themselves to suit the given situation.

"This illustration is a very simple one, but the principle involved is a broad one, and can cover any case.

"Many general practitioners have neither the desire nor the ability to cut; they know that operations should be done by those who make that their life work, but they equally know that the general practitioner must be competent to make proper surgical diagnosis, to use the best judgment as to what to advise, what not to advise, to act with the surgeon in the management of the case after operation. When he does these things as he ought, when his patients find that he informed them correctly as to the conditions present, that the surgeon

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confirmed the opinion previously given, that he was treated as an equal by the surgeon and not as a student, that his judgment was used in the post-operative management, then is he properly regarded by the patients, and he may be certain that, when they need a surgical procedure in the future, they will come to him first, and not to the surgeon, because he has shown himself competent to manage such affairs. In addition to this, the surgeon is less likely to endear himself to his patients than the family physician, and hence the latter is the one likely to be sought the second time, provided he has shown himself competent to care for such cases in all respects except the operative one.

"This method is open and honorable; it needs no secrecy from the patient. The physician simply tells the patient that the business arrangements of the operation are as follows: He has arranged with the surgeon, and the fee for the whole matter, the railroad fare (if to another town, the hospital bill, the surgeon's fee and his own), will be $——.

"Lawyers are not caught with such bad business methods as we doctors are. One does not hear of a country lawyer having to take a client to a city to try a case, going home with, or without, a 'thank you' and a cigar. He has definite arrangements, and does not have to sneak into the city lawyer's office to beg for a part of the fee which he has placed in his hands.

"Let us do business in a business way, and be as charitable as we wish. If we write to a city surgeon, and tell him of a needed operation on a patient who is poor and can give him but $20 or $50, as the case may be, he will do it for even that small fee, if he knows we are honest with him, and are not trying to 'work him' and 'hog' the fee for ourselves."

There were many other letters of similar character — nearly all joining me in condemning the payment of a commission on all business sent to the specialist, but arguing that division of the work and the fee may ofttimes be perfectly proper; but

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further quotations would be useless. Those given show pretty well the general sentiment of the profession.

After a thorough review of the whole subject the conclusions I have reached are as follows: —

1. No commission should ever be paid by specialists for business simply "referred;" i. e., when a patient merely asks the doctor: "To what oculist shall I go to have my eyes treated?" or "To what surgeon shall I go to have my tumor removed?" There is no special obligation to the physician, and no compensation should be offered or expected.

2. No commission should be paid or asked for ordinary "consultation;" in the advice as to future management of the case, the attending physician has been amply repaid for any trouble to which he may have been put in securing consent and pay from the patient for the visit of the specialist. The added confidence of the people in the attending physician, arising from the few well-chosen words of commendation by the consultant, is often worth far more than any sum.

3. No division of the fee should be thought of when the patient is taken to a city specialist for consultation or operation, and is willing to pay the physician freely and fully for advice, and for time and money spent, as well as for treatment subsequent to his return home.

4. Division of the fee is justifiable and honorable whenever the family doctor accompanies the patient a long distance, and the patient will not or cannot pay more than traveling expenses and the specialist's charge. In such a case after the specialist has collected his fee it is perfectly proper for him to ascertain whether or not the attending physician will be or can be amply repaid for his services; and then do "as he would like to be done by."

5. Division of the fee is also justifiable when the family doctor is put to much trouble and loss of time in inducing the patient to submit to the specialist's treatment, and the patient will not pay the doctor for the service. In the country, especially, people will pay only for medicine and visits —

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never for advice or counsel, however much they may trouble their medical attendant or how many times occupy hours of time at "the office" going over the details and possibilities of the case.

6. Equitable division of the fee is proper when the specialist operates, and the general practitioner assists in the work and assumes full charge of the after-treatment, which will not be adequately paid for by the patient.

7. Division of the fee is also advisable when specialist and doctor treat the case jointly (as is frequently done) because a large proportion of the people will not pay two bills for what is regarded as only one service rendered. Under such circumstances either one may present the bill and pay the other.

This last plan is becoming very popular with some doctors. They say to the patient: "Dr. ——, the eminent surgeon of Chicago, and I will operate on you, and look after you until you have recovered from the operation, for $——, for which you can give me a check, and I will settle with him at once." The advantages of this plan are that it enables the physician to collect his fee at the time the services are rendered, instead of waiting a year or two, and permits him to retain a fair amount of the sum to properly compensate him for his labor. The chief objection to this plan is that there is an incentive for the doctor to get the cheapest, rather than the best operator, in order to make as much out of the patient as possible. But this danger is apparent rather than real, because (1) most doctors are honorable men, and will seek the best possible skill regardless of pecuniary gain; (2) even an unscrupulous man will recognize the necessity of securing the best consultant and operator since incompetency means disaster, and a few failures would completely ruin one's practice; (3) with better colleges, and a higher standard of requirements for admission only gentlemen will soon be admitted to our ranks — and with true gentlemen there will be no dishonesty.

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Whether or not the patient should be informed of the division of the fee must depend entirely upon the character of the patient. Most people have an exaggerated idea of the importance and ability of the "great city specialist," and a grossly minimized conception of the value of their family doctor — another illustration of the saying that "familiarity breeds contempt." Some people can be told freely and candidly, of the arrangement between the two medical attendants; they will be glad to know that the family doctor is to receive extra compensation for appreciated services — a sum which they would never be able to pay, plus the fee of the specialist. Others would be indignant from non-appreciation of the merits of the case — under which circumstances concealment should not be deemed a confession of wrong-doing — it is but the application of the Biblical saying: "The laborer is worthy of his hire;" if the patient will pay both specialist and the doctor liberally, all is well, and the discussion ended; but if, as is usually true, he is willing to pay the specialist a large fee and the doctor practically none (from either pure meanness or inappreciation of the value of services rendered), the specialist should divide equitably in proportion to the amount of work done by each; i. e., the real value of the services rendered. This is not paying a commission for business sent. It is merely seeing that an injustice is not being done the doctor. Selfishness and greediness must not here be mistaken for "ethical feeling." It is merely following the injunction of the wise man of Nazareth: "Render unto Caesar those things which are due unto Caesar" — seeing that the physician is as well paid, proportionately, as is the surgeon, the oculist or other specialist.

After all has been said, it is really a question of honesty. Just so long as both specialist and doctor are honest and well-meaning there will be no trouble, and the interests of the patient will not be allowed to suffer.

The honest doctor works first for the good of the patients, second for a reputation and third for compensation. If the

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dishonest one stoops to methods (concealed or open) which are disreputable in favor of the third at the expense of the other two his end will be infamous; and deservedly so. If, therefore, the doctor designedly seeks the services of the specialist who pays the highest commission rather than the one whom he believes will give the best service, his immediate results will be unsatisfactory for the want of skillful attention, and his ultimate ones disastrous from loss of business loss of self-respect and loss of confidence of his fellow-men. The honest doctor will not be greatly tempted, therefore; for his own protection he must of necessity select good men, not to consider his natural interest in the welfare of his patient.

As for the dishonest ones (and, alas! there are a few such) the sooner they go to the incompetents, who offer high percentages the quicker will their race be run, and their places taken by men who place a higher value on brains and skill and the welfare of their patients than on the fascinating "almighty dollar." In the practice of medicine, as in other walks of life, "honesty is indeed the best policy."

As for the specialist (and most of them are, I believe, honorable men — though a few are misguided), he works first for the good of his patient, second for the good of the doctor, third for a reputation and fourth for an income. His first thought should ever be for the welfare of the "stranger within his gates," brought there by some doctor; but of almost equal importance is the protection of the physician who has thus honored and favored him in the selection of his consultant, operator, friend; for the ideal relation of specialist to doctor is that of dear friend — a friendship based upon professional brotherhood and not upon a financial profit. Hitherto the chief aim of the honest specialist, next to rendering the best possible service to the sufferer, has been to see that the confidence and esteem of the patient is kept unsullied for the regular attendant, regardless of any bad treatment adopted through inexperience or misunderstanding;

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indeed, the man who cannot return a patient to his family doctor with an increased degree of respect and faith is derelict in the performance of his second duty. But there is to be added another consideration: the financial as well as the professional interests of his brother practitioner. To this man the specialist owes much — far more than is usually appreciated — for the confidence displayed in his professional attainments; for the trouble (and often the expense as well as loss of time and business in "working up" the patient for the specialist — often a matter of much difficulty in case of serious operation), and for the fee which he receives. In the use of the latter he must be generous, erring upon the side of justice if at all. While it is true that the specialist is compelled to do much charity work for the same doctor who brings him the paying patients, he should remember that this burden is remarkably light as compared with the free services rendered by the average "common doctor," and should count it as "treasures laid up in heaven," "for the greatest of these is charity." Remembering then the vast amount of unrequited toil, bearing in mind the hard struggle against poverty which is the lot of a vast majority of our brethren (90 per cent of doctors die penniless), and, above all, considering that the ordinary patient is rarely inclined to pay his doctor what his services are really worth, the specialist should seek to repay the debt by ascertaining whether or not the regular attendant has already been or will be paid sufficiently well for services rendered; if not, then by dividing the proceeds equitably.

If this rule be a violation of the code of ethics, the sooner the code is changed the better. I believe it essentially ethical in principle and easy of honest application.

DISCUSSION.

DR. KELSO, Joplin: I have received a number of circulars from specialists but I have always simply thrown them into the waste basket and made

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kindling out of them as soon as I got them. I have had cases where it has been necessary to have a specialist called in, and then I charged my own fee and let him charge his. But there are cases in which they would like to have their family physician go with them; where there is something to be brought out, and in such case, say the fee of the specialist is five hundred dollars, in case that was all the patient could pay, it would not be out of the way to pay the specialist say four hundred dollars and the family physician one hundred for going with him, etc. I have never had anything to do with the fee of the specialist, except perhaps to persuade him to take a little less on account of the poverty of the patient. But I look out for my fee and let the specialist look out for his.

DR. YOUNG: It is very hard to keep a mercenary consideration out of the transaction if such a bargain is made. My course of dealing has been to do all that I could myself without calling on the specialist at all, but when I became convinced that I could not properly treat the case, I have sent them to the city to consult a specialist, leaving them to select the specialist themselves. If they ask me who to go to, I send them to some friend whom I believe to be competent to manage the case, and I then write him a letter and tell him who the patient is and what I am sending him to him for and ask him to treat the patient right, in every respect leaving the matter to him.

DR. W. B. DORSETT, St. Louis: This subject has been considered most frequently from the standpoint of a transaction of the specialist. I rather think that there is another side to the question, treating it either as a sin of omission or commission, on the part of the general practitioner. Now to illustrate. About a year ago a certain physician brought me his sister-in-law, his brother's wife, to have a laparotomy performed, and, after examining the patient, we went into another room, and I told him that I thought the operation should be done. He said: Doctor, what are you going to charge? I said: I do not know anything about the man's condition or circumstances; you are better able to determine that than I. Well, he said, he owns a farm of 150 acres and has a grocery store. I said, will one hundred and fifty dollars be too much? Well, he said, you charge $175, and give me $25. He has paid my railroad fare down here, but I have been away from my practice a day. Now, that gentleman did not have the nerve to ask his brother a fee. I said, Why don't you ask him for that yourself. He said, I have practiced medicine for my brother for the last 25 years and have never charged him a dollar. I said, do you get your groceries from your brother for nothing? He said, no, I pay my bills. I called his brother in, and after telling him that the operation should be done, he inquired, what is it going to cost? I said, you will have to pay me $150, and pay your brother $25 for his lost time. He turned to his brother and said: Why, John, why didn't you tell me that? Why didn't you tell me that I owed you twenty-five dollars? And that doctor looked as if he would go through the floor. Now I do not expect to get any more patients from him. Occasionally we come across patients, although it has not been very often in my case, a patient either

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comes or is brought to the specialist, and he is asked to place a price on the operation, and when it is mentioned he will say, Doctor, I will come back and see you to-morrow or in a short time, and then after a while we hear that the operation has been performed by someone else. The inference is that the other man has underbid the first or else he has given a commission.

DR. J. D. GRIFFITH, Kansas City: There is still another phase of this matter. It has not been very long ago since a gentleman brought a patient down to see me at the hospital, and when he asked me what I would charge to operate, I said: Doctor, you know the circumstances of the man, you make the charge. He said: I will pay you seventy-five dollars for this operation. I said of course I will do it for you for $75. And he charged $225, and paid me $75. I have heard of this being done several times. Again a gentleman brought me a patient a week ago and inquired what I would charge to operate. I said, you know the patient's condition. Well, he said, I will tell you, you charge five hundred dollars and I will get $250 of it. So you see the thing does not always come in the shape of a commission; it sometimes comes as a demand.

DR. W. G. MOORE, St. Louis: There is a system of high-handed policy nowadays that is degrading the best profession, as well as our political friends. But I will say to you that like Jonathan Hutchinson many of these men are specialists of the skin and all it contains. We have surgeons who are specialists on the skin and its contents. Like Shylock he demands his pound of flesh, but he never leaves to the general practitioner anything. Now here is another thing about it. Dr. Griffith intimates that the general practitioner is going to control the specialist. Well, if so, it is just turn about and that will be fair play, because up to date the specialists have been controlling the general practitioner in a financial sense. We have been sucking the hind teat. You know there is very little in the hind teat. But now I wish to warn my fellow-practitioners to beware of the man who is an all around specialist. You cannot expect to control by legislation, medical or otherwise, any such man. But if a man devotes himself to gynecology, to abdominal surgery, to surgery of the rectum and does not do anything else, but that sort of surgery, as a rule he is a safe man to intrust your case to. Now another thing I would call to the attention of the general practitioners, a thing I have learned in that school of experience that is so impressive, is this, for the good of your patient and for the sake of the friendship of your patients, before the operation is done, have a clear undertanding with the surgeon what his charge is to be. It has not been but a short time since I referred a case of appendicitis to a friend for operation; he operated and, in a short time, less than two weeks afterwards, a very warm member of the St. Louis society came into my office and said, "What in the world do you think of this." And he produced a bill that for a few minutes kept me from thinking—it paralyzed me. "Well," I said, "You know that these surgeons have a way of fixing their own charges, and that this is within the maximum." "Well, but I am not able to pay that bill." "Well," I said, "Let me take the bill and

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I will see what I can do with the surgeon," and I did, and I got him to reduce it to a very happy medium with one shot. But it is an unpleasant business. It makes me feel that we must know what the surgeon is going to charge beforehand. Now, gentlemen, as I said in the beginning, I say at the close, this paper is going to make specialists and general practitioners who read it, think. Take a college that musters out a lot of fellows and they look like tie-choppers on a strike — they graduate them, a whole rostrum full, and you are afraid one will sit down hard and explode with a bump somewhere. Do you expect no set competition from that sort of material. You won't get it in the true sense of the word. The instinct of self-preservation is too strong for them; they will look out for themselves first. There is not one of them who loves the people better than himself. And if this spirit of commercialism which is fast pervading the profession is not stopped it will degenerate the profession just as it is threatening to disintegrate the medical profession.

DR. H. C. CROWELL, Kansas City: This is a question that I have come in contact with naturally, and it has annoyed me exceedingly, and I have thought about it a good deal and am not yet clear as to what method or what means are necessary to correct it, but I hope, although I fear I hope in vain, that the paper read by Dr. Lanphear may be seen soon to do good. The conclusion that I have arrived at in this matter is that it is partially due to weakness in ourselves. We, as a profession of surgeons, specialists or physicians one and all equally alike have failed to raise the moral standard of the profession, and until that can be done we can never accomplish what we are aiming at. Now, I live in Kansas City, a place where they bring cattle, hogs, sheep, horses and everything to sell and withal they bring patients. You would hardly believe it, but it is a fact that there are men who come soon after their graduation — soon after they have gone out from the lecture-room — they go away and come back in a little while with a patient who wishes to have some operation done and they practically ask: How much will you give for this case? Meaning simply that if they can arrange the price you can have the case. Or they come to you and say, I will pay so much for the operation, will you do it? Or they come to you and inquire what will you charge for a certain operation. Then they run around and try to get it done cheaper. And I have got so that I hardly ever give a price, because if you make a price almost invariably they find somebody who will do it cheaper or who will pay a commission and you lose the case. Somebody else does the operation.

DR. KUHN: This whole question is one of honesty between the specialist, the general practitioner and the family. I have had some experience in this matter. I have sent from time to time cases of eye, ear, nose and throat troubles to the specialist and I have never expected a fee. It is a question of honor between myself and another man. His work is worth so much. He is entitled to it and I simply do him the courtesy of sending the case to him. It is a courtesy that we owe to each other. In regard to surgical operations I pick my operator, and the family will never get me to make a

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bargain counter of the surgical profession. I know that in Kansas City, and I suppose it is so everywhere, people run around and get bids on an operation. I think it is an outrage and no honest physician will countenance any such thing. I select my operator, tell him the circumstances of the case, and ask him his fee. I usually tell the family the fee, so that they will know exactly what it will cost them, and when the bills are paid, the doctor's bill goes in on his own letterhead or billhead and his fee is paid to the doctor. I make my bill whatever I see fit.

DR. ROBT. BARCLAY, St. Louis: A physician brought a patient to me and asked me to examine him thoroughly and give him a written opinion upon the case and to inclose him a bill. I did that and the bill was never paid. The physician who was liable to me for my services did not reimburse me and I was left out in the cold although I gave the result of my years of study. Another experience I have had was this: I was called upon to operate on a man who was under the care of a physician who was employed by a certain corporation to attend to its injured men, the corporation being liable for damages. The physician asked me to operate, but he did not want the corporation to know that he could not perform the operation. It was a small operation for me, but, although the case had been treated for three months, the man was cured in twenty-four hours after the operation, and I asked him to include a fee of $25 for me when he presented his bill. When settlement was made, I received no fee; and I found that I could not collect from the patient, because he had not employed me; the corporation had not employed me; and the physician who employed me had kept me in the background, because he did not want it known that he was incompetent to perform the operation, while I, in order to protect him, had remained thus in the background.

DR. EMORY LANPHEAR: If there is a member of this association who has not read "Beside the Bonny Briar Bush" he should do so. In that he will find the history of a very estimable lady, who was married to the wrong individual. This lady was attacked with appendicitis and Dr. William McClure, the hero of the story, knowing that she had no money, and knowing that the services of an eminent specialist were necessary went to the ex-lover of this lady, who was a wealthy man, and said, after explaining the circumstances: I will pay one-half of the surgeon's fee to save the life of this lady, if you will pay the other half. And they telegraphed to Edinburgh for the eminent surgeon, whom some say was Sir George MacLeod, professor of surgery in the university, and this eminent surgeon came to the little village and operated upon the lady. And Dr. McClure, with great pride, handed him the fee. Sir George MacLeod heard how this money had been raised. He said nothing about it, but when the train was about to pull out for Edinburgh, he reached out his hand, in which he had concealed the fee, to shake hands with the doctor, and left the money in the doctor's hand. Now, there is a lesson to be learned from this story. But, I will relate a different story. A very estimable doctor of southern Illinois, who was as poor as the proverbial Job's turkey, rode all over his county trying to raise

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the money necessary to pay a surgeon to remove a fibroid tumor from a patient. After some weeks of hard work he succeeded in collecting enough money to pay the transportation and hospital bill and $100 to an eminent surgeon in St. Louis, to whom he took the patient. As I said this doctor was so poor that he had to borrow the money from the bank to pay his traveling expenses to and from St. Louis; he boarded at a fifteen-cent restaurant and lodged in a ten-cent bed; he remained four days until his patient had passed the danger point. When he handed the one hundred dollars to the surgeon he very modestly, or perhaps, immodestly, explained the circumstances. Did that surgeon divide the fee? He gave the physician a cigar! Would it have been straining the code of ethics or dishonorable for that surgeon to have said to that doctor: I appreciate the service you have rendered me and the services you have rendered this woman, and I will give you one-half of the fee that you have collected. It will pay your expenses and pay you in part for your time and labor and energy you have devoted to the working up of this case for me.

As for the practice mentioned by Dr. Kelso of some so-called specialists sending letters throughout the country offering to divide fees or pay commissions for business sent them, it is too contemptible to discuss. As Dr. Kelso says they are properly consigned to the waste basket. Nevertheless there are circumstances under which a specialist may properly divide the fee; there are cases where that can be properly arranged between the specialist and the practitioner.

I think, that if this association were to go into this matter and lay down rules it would prevent much of the dishonorable work and stop many dishonorable methods which are at present being pursued. The gentlemen who do not live in a large city do not realize the extent to which this matter has gone. When I read this paper before the St. Louis Academy of Medicine a young man of ability, who has been an assistant of one of the surgeons in St. Louis for two or three years, said: Doctor, you are simply outlining a practice which is done very extensively, in a sly way; and he said, For three years I have been assistant to Dr. So and So, and while he does not approve of the division of fees and condemns the payment of commissions, when a doctor sends him a case, if he gets a fee say of $500, the next day he sits down and writes a letter, inclosing a check, and says "in appreciation of your friendship I inclose herewith two hundred dollars." That is what we have to contend with.

In conclusion I want to say that, as is well known, I limit my practice exclusively to surgery and diseases of women; and moreover, I do what I believe every specialist should do, I refuse to consider an operation unless it comes through the family physician. If a man telephones me and says: "This is John Smith, and I want you to come and operate on my daughter, and a check for a thousand dollars will be ready at the conclusion of the operation." I would say: "Mr. Smith, I cannot operate on the case; you must send the case to me through your family physician." Then in regard to the fee. My practice is, when a case is brought to me, if the patient says to

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me, What will your fee be? I say I do not know your circumstances; the doctor has not explained to me your financial condition or ability to pay; this is not a question of dollars and cents; it is a question of saving your life; and I consult with the family physician and allow him in a great measure to regulate the fee.

We then, jointly, say to the patient: "OUR fee for operation and treatment will be $—. We will divide this sum between us in proportion to the amount of work each of us may do." I find this plan very satisfactory to patients as well as to doctors. If there is anything unfair or dishonorable in it I fail to see it.

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THE CURE OF OLD SINUSES.*

By Herman E. Pearse, Kansas City, Mo.

In attempting to cure a sinus, of whatever type, it is well to remember that at some time, if not a congenital one, it has been a means of saving life, and may yet be needed to carry off effete matter from some diseased area below it; such an one is a sinus leading down through soft parts to a bone disease. The older physicians believed that such a sinus discharged material collected from "all over the system" and that it "carried off the bad humors;" that it was essential to life; that to "stop a running sore would throw a patient into a fever," etc., etc. The remains of such a belief are found among the laity at the present time.

The facts are as follows: A colonization of germs takes place in a bone or upon fascia, and in consequence an abscess forms. The necrosis that follows is along the lines of least resistance, and tends, usually, toward the surface. Here the pus is evacuated, when an open, discharging sore follows, which refuses to heal. If carefully searched for, a sinus will usually be found running down into the soft parts to the point of original infection, possibly to a portion of necrotic bone, and possibly to a diseased focus upon fascia, and from this area the sinus daily conveys the products of germ growth and of tissue death. This sinus is a safety outlet, and must exist until the diseased focus is removed. Its cure is the cure of the disease to which it leads and to the location of which it forms an index or guide.

Other sinuses have been such, "safety outlets" at one time, and have become useless owing to the cure of the original

* Read by title.

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trouble by natural processes, and only exist by virtue of their structure, the fibrous walls of which they are composed resisting all efforts on the part of nature to obliterate them. Or, they may have opened from cavities or organs lined by mucous membrane, and the walls of the sinus become similarly covered, and thus healing and closure is prevented and the tract becomes permanent. In such a case the contents of the cavity is apt to assist in keeping the sinus active by discharge after the pus formation has ceased.

Such a sinus is one from an old tubal abscess to the bowel. At one time it saved life by forming an outlet for pus of a virulent nature and of dangerous power. Now it is useless, and kept alive only by its infected and thickened walls. Rectal fistulae are of similar formation. Most of the post-operative sinuses lead down to an infected stitch or ligature, or connect with some cavity lined with mucous membrane whose contents find thus an unnatural path of escape. Most tubercular sinuses lead to tubercular disease in permanent structures beneath the tissues in which the sinus exists, and follow in the course of a tubercular inflammation.

The method of cure that I have worked out for all sinuses that are within reach of the surgeon is: First, to dilate, open and straighten the sinus if possible, so that the products of inflammation may find a speedy outlet. It will often happen that the foreign body will then come to the surface and be cast off, and the cause of the trouble removed. In accomplishing this the knife can often be used under cocaine anaesthesia. Dilatation by the steel dilator is painful, and often dangerous, and I have come to use the bulbous sound of zinc, amalgamated with mercury and attached to the negative pole of the battery. The positive pole should be a large diffusion pad. When the sound burns or hurts, use a larger pad. I have used one as large as the patient's back. The negative pole gives off bubbles of hydrogen gas, and dilates and liquefies the walls of the sinus. Work slowly and carefully, and many cases will be benefited. After securing,

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in this way, a perfect drainage, an antiseptic fluid can be injected. I have found the best to be one-half to one-quarter per cent solutions of formaldehyde, or formalin, with aromatic antiseptics, such as thymol or listerine. There is a large number of proprietary mixtures of this class on the market that answer the purpose admirably. Bichloride of mercury, carbolic acid and iodine solutions have long been used with varying success, but the formalin solutions as above described, are better. The action of the electric dilator is a good antiseptic in itself. Solutions of formalin in water alone are too painful. If this treatment does not cure, a thorough curetting may end the trouble, where one is sure of the field below. Naturally one must not and should not curett away the protecting walls of a sinus if poisonous discharges are to be poured into it from below to reinfect it. Should this, in turn, prove ineffectual in causing the sinus to heal, it should be entirely dissected out, and all causes lying at the bottom of its existence thoroughly removed. If it be a sinus leading to an infected thread or other simple body, healing will be rapid and complete. If it be a tubercular sinus the work of removal will require to be most thorough indeed to permit of a hope for complete primary union and freedom from return of the trouble. If it be a communication with some organ lined with mucous membrane it is likely to tax the ingenuity of the surgeon to the utmost, for extensive plastic work upon viscera will often be required. Among the last class are sinuses leading from the bowels to the surface of the body, usually traumatic in character, and accompanied by wide areas of peritoneal adhesions; or those connecting the ureter, bladder, rectum with the surface of the body. Sinuses opening into the canal of the central nervous system constitute another troublesome class. All of these cases are problems in plastic surgery and in reconstructive surgery, and in the tubercular class require an energetic medical treatment in addition to skilled surgery to accomplish the ends desired. The following four cases will illus-

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trate methods to be used in the cure of this annoying trouble: —

Case I. Mrs. P., of Kansas City, Mo., consulted me August 8th, for an old dischaging sinus located upon the back. She had a calculus removed from the right kidney some six years ago, and the wound had never entirely closed. During these years she had used every effort to keep the wound clean and employed peroxide of hydrogen and bichloride of mercury washes freely, but to no avail. The odor was bad; one could detect it at once upon entering the room when she was present. She suffered from a more or less constant fever and pain. There were several openings in the skin of the right lumbar region, and from each a sinus extended, one upward and inward, one downward and forward, yet each communicating with the other, so that fluid injected into one came out through all the others. The anterior right side was occupied by a large tumor extending from the rib margin above to the ilium below and far over toward the median line; continued pressure upon this mass would cause pus to flow from the openings at the back. The conclusion was obvious that the perirenal tissues were the seat of extensive abscess formation, and in this mass of reticulated connective tissue the pus had burrowed extensively; thick banks of granulation tissues were piled, as it were, as barriers between this process and the peritoneal cavity; from the proximity of the ascending colon, the colon bacillus had obtained easy access and was responsible for the foul odor and dark character of the pus.

The woman was in no condition to undergo an operation, nor yet could she endure the thoughts of dragging out a miserable existence in her present polluted condition. I undertook to cure her. I first injected the sinuses with bichloride of mercury 1 to 2000, but was unable to do much good as the openings were too small to allow of any satisfactory degree of drainage. The tissues resented the use of a dilator. I remembered the success attending the use of the sound as a

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negative electrode in the urethra, and decided to try it here. A bulbous bougie was attached to the negative pole of a galvanic battery, and a large sponge-electrode for the positive pole was placed over the hip and side and 10 m. a. of current was turned on. This was gradually increased as the patient could bear it, and the result was most satisfactory. The sound soon passed easily; the strictured portions gave way with the formation of abundant hydrogen bubbles; the pus flowed freely and the tissues were cleansed. Soon, however, it became apparent that all the regions about the kidneys were not being reached, as the tumor mass remained large and boggy and furnished pus enough to undo all our cleaning. I then tried the use of formaldehyde solution with great success at first, but on account of the pain caused I was forced (after a few weeks) to desist. I then turned to the proprietary antiseptics containing formaldehyde, covered and corrected by the aromatic antiseptics and found them free from pain. I then filled the tissues with such a solution each day, using from two to four ounces each time and hindering its outflow by bandage and dressing. Slowly the tumor mass decreased, and after four months of persistent work my patient left me cured of her fistula without operation.

Case II. A boy of thirteen years, Johnny R., was sent to me by Dr. Bertran Wheeler, of Kansas City, Mo. He complained of a swelling and tenderness at the lower end of the left thibia; he had been injured several months before by a hedge thorn penetrating to the bone at the tuberosity of the tibia above, and the swelling had by degrees involved the successive parts of the bone, leaving a few well-healed scars down the leg, but apparently a healthy bone behind it. However, at the ankle the trouble seemed permanent. The swelling increased and more or less pain was found on examination. The boy's sister was the victim of tubercular spinal disease, and a tuberculous taint pervaded the family history; hence the diagnosis of tubercular bone disease or periostitis at least, was made.

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Later the swelling opened and a small amount of reddish pus was discharged. Numerous devices were tried to cure the resulting sinus without operation, as the family were very much adverse to any cutting procedure. At last, finding neither injection of formaldehyde solution, of guaiacol, or the same by cataphoresis would cure the trouble, the family consented to operation upon my advice. An incision was made over the lower end of the tibia upon its inner aspect, and a lateral incision carried backward from this as far as the diseased area extended. The periosteum was very much thickened and the entire mass seemed to consist of tubercular granulations and tubercle and extended backward under the tendinous ends of the muscles of the calf. The bone showed no disease, and after removing all diseased tissue and cleansing and curetting the bone shaft, the search for bone disease was abandoned and the flaps sutured into place. There was complete cure of all disease. The boy discarded his crutches and has attended school since and runs and plays as other boys do.

Case III. Mrs. T., of Kansas City, Kas., aged twenty-five, married, one child, four years of age, was sent to me by Dr. C. H. Colvin, in 1899.

She came for relief from a ventral sinus existing for over one year. Examination showed two scars upon the abdomen, evidently old laparotomy wounds; one in the median line just above the pubic bone, and extending almost to the umbilicus, the other just to the right of the first. She stated that she had been treated for "female difficulty" in Philadelphia, and had had uterine trouble since the birth of her only child, now four years old. In the month of October, 1898, she was operated on by a Kansas City surgeon for double pyosalpinx, and the diseased adnexa removed. The wound suppurated and left a sinus, which gave forth an annoying discharge. Her physician stated that a probe could be passed five to seven inches in the sinus and extending backward.

An operation was undertaken in February, 1899, for the cure of the sinus by the former operator, a probe being

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passed and an incision directed towards its tip. (This accounted for the scar on the right.) The operation was a complete failure and did not close the sinus. There developed frequent attacks of obstruction of the bowels as evidenced by vomiting, cramping, etc. In April and May, 1899, several abscesses formed, breaking into the sinus, and in June, 1899, severe bladder symptoms, dysuria and tenesmus with pus in the urine, set in, and urine was discharged through the abdominal sinus. The annoyance of the bladder symptoms and pain reduced her general health and rendered her miserable; treatment by injections, electricity, etc., could not be tolerated, as it caused intense pain, and the fluid injected at times passed into the bladder, causing increased tenesmus and burning, and at times violent abdominal pain and cramping. She was placed in the Woman's Hospital and operated upon in 1899, Dr. Louis A. Luscher assisting, and Dr. Dora Wilson administering the anesthetic.

There was a mass of inflammatory matter about the right horn of the uterus. Two loops of the intestine and one loop of the sigmoid flexure of the colon were caught into this mass. The bladder fundus formed its lower and anterior portion. The omentum was wrapped about all. This was tied off and removed, and while Dr. Luscher dissected one side I worked upon the other. We found all three loops of bowel connecting with the sinus, as well as the bladder-fundus. The openings were closed by Lembert suture, and each loop cleaned and returned to its proper location in the abdomen. The sinus was then dissected loose from the bladder and the whole mass removed from the uterus. The bladder wound was turned downward and forward and closed; the peritoneum and omentum were fastened to the fundus and sides of the uterus so as to wall off the peritoneal cavity from the bladder and the perivesical space packed with iodoform gauze. The remainder of the abdominal wound was closed without drainage. The patient made a good recovery and is now in excellent health. There is no more bowel obstruction,

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no sinus, no more cramps, no more bladder pain or dysuria. She is well.

The inflammatory mass removed proved to be an old abscess cavity opening into the bowels and bladder and upon the abdominal surface. Tightly rolled in its center were the two silk ligatures, double knotted, that had been used to tie off the adnexa. How did the one from the left horn reach the mass on the right? Carried by the omentum? Possibly. Could we have a more eloquent sermon against the cable silk ligature and the en masse ligation in ovariotomy?

Case IV. Mrs. W. came to me with the statement that she had a sinus discharging for six years. She lived in California at the time of the commencement of her trouble. Her physician had diagnosed the trouble as ovarian abscess, and it had opened spontaneously in the groin, exactly over the femoral vessels. A probe introduced passed inward and downward toward the head of the colon. The ovarian region, palpated through the vagina, seemed a little thickened and obscure, but the inflammatory deposits were upon the back of the pelvis and high up. Urine and gas escaped from the sinus, and milk injected at the sinus came out of the urinary bladder. The converse was not true; milk injected into the bladder did not appear at the sinus. There was intense dysuria and cystitis.

Operation was done at the Woman's Hospital, Drs. Wilson and Luscher assisting. The sinus was below Poupart's ligament, and was carefully dissected out down to the femoral artery and along the artery until the ligament was passed. Then the abdomen was opened above Poupart's ligament and the sinus pushed down and under the ligament, the peritoneum pushed upward and the sinus brought out into the abdominal wound. The wound and the area left after dissecting out the sinus were all closed up by catgut sutures in layers. The dissection was continued until the point where the femoral vessels crossed the ureter, beyond which it could not be carried. A second incision was made over the bladder and the walls examined.

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There were no openings except those of the uterus through its walls, showing that the sinus was one of ureteral origin. The sinus was now cut away from the femoral vessels and from the ureter and bowel, the openings closed, and that portion of the wound packed. The remainder of the abdominal wound was closed. The patient reacted nicely, and on the fifth day the packing was removed and urine flowed freely from the wound. The ureteral wound was "leaking." Believing that it could close by granulation, as long as it was pervious below, I flooded the wound with a 10 per cent. solution of balsam of Peru in castor oil. This protected the tissues from the urine. The cavity left after withdrawing the gauze was emptied of urine and pus every two hours, and fresh balsam and oil applied. When healing had progressed a little she was turned toward her face, so that drainage was better. In about four weeks urine ceased to flow from the wound. Under urotropine the cystitis decreased and at present the operation wound is about closed, the old sinus is entirely healed, and the pain, urinary leakage and gas and pus discharge is ended. Continued patient treatment will cure the case.

It seems probable, in view of the history of the case and the conditions found at operation, that the case had been one of spontaneous cure of renal calculus escaping by ulceration from the ureter and out through the opening at the groin. The kidney on that side remains active.

In the extensive sinus formation about tuberculous bone disease, the treatment is essentially operative, as there are always areas of necroses or caries to be found. The best rule, however, seems to be to treat the sinus by dilatation, drainage and cleanliness until the soft parts are free as possible from swelling and inflammation, and then excising the fistulous tract, and removing diseased bone and sequestra below.

In conclusion, let me say that a sinus must always be studied back to its causative factors — to its formative period,

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and the causes underlying its formation removed — before its cure can be hoped for. The treatment necessary to establish such information and to prepare the way for cure, will often extend over a considerable time.

322 Rialto Building, May 1, 1900.

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UTERINE CARCINOMA.

By Milo B. Ward, Kansas City, Mo.

Perhaps an apology should be offered for presenting a subject which has been so very frequently considered by the profession and which affords so limited a scope for discussion. However, carcinoma is such a common affection and its progress is so insidious and fatal we cannot be too familiar with its history and treatment.

Nothing definite has been determined in reference to the etiology of carcinoma. Opinion is divided between those who adhere to the theory that carcinoma is "an atypical proliferation of epithelial cells from a matrix of embryonic cells of a congenital or post-natal origin," and those who are quite positive that all malignant conditions are caused by microbic infection or invasion. It may require many years of research to determine which, if either, is correct. Perhaps it is not essential that the cause should be definitely proven. For all practical purposes we may as well leave the question of causation to be determined by those whose opportunities for investigation are unlimited, and devote our time and energies to acquainting ourselves with the symptoms and most approved methods of combating this baneful affection.

Frequently it will be found that the usual symptoms are absent. In that form called cauliflower excrescence malignancy appears so insidiously that it is essential that the most careful observation should be frequently made, in order to draw the line between benign and malignant conditions. In the nodular form, that is, where the cervix uteri is hard and inclined to be irregular nodular carcinoma must be anticipated even before there is any ulcerative degeneration. The most insidious, and at the same time, most fatal form, is the cylindrical-cell carcinoma. This most frequently attacks the mucous

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membrane above the cervix uteri, and the uterine endometrium. Frequently this form of carcinoma will develop to a stage which will prove fatal regardless of the treatment, before either the patient or the physician is aware of any disease being present. It is frequently very difficult to diagnose this form of carcinoma. An examination through a speculum would give no clue to the condition. The diagnosis, then, must be made by the bi-manual touch in connection with the Systemic symptoms, if there are any.

It is claimed by some investigators that all malignant growths are primarily benign. If this be true, it accounts for the frequent errors of diagnosis. It certainly is true that it is not an easy proposition to define where the benign condition ceases and the malignant begins. This leads the writer to say that, all conditions and growths of the uterus which do not yield to appropriate treatment within a reasonable time and give any signs whatever of carcinoma, should be removed by radical procedure, without waiting till carcinoma can be definitely demonstrated. This is, perhaps, rather radical teaching, but what other plan can we safely follow? The mortality of carcinoma is so great that we must not hesitate to sacrifice a uterus — which has fulfilled all of its maternal functions — for the sake of waiting from day to day, in order to prove beyond a doubt that what appears to be carcinoma is "the real thing." If the disease should appear in a young woman and the symptoms are not serious, we might be justified in waiting for more thorough investigation than would be wise in case the patient has borne children and the uterus is not so important an organ.

It is not recommended that operative procedure be resorted to in every case that gives some suspicious symptoms, without making a reasonably thorough investigation to determine the condition present. It will not require many days to carry on such examinations. It is generally conceded to be true that, so long as the cells do not migrate from their natural habitat into tissues of different cell-formation, the growth is benign. If, then, we possess sufficient skill in microscopy to

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enable us to always say that there is or is not cell-migration, we will be prepared to draw a line between benign and malignant conditions, which will greatly aid in the best plan of procedure.

The treatment of carcinoma of the uterus is practically always surgical. Various medicines and applications have been from time to time highly extolled, but it only takes a brief period to prove that they fail more frequently than they succeed.

The surgical treatment consists of two methods, namely, the knife and the curet. Total and complete extirpation of the diseased organ and as much of the surrounding tissue as possible, is the only remedy that can be called ideal. Whenever it is found that the disease has gone beyond the possibility of complete removal, we have in the Paquelin cautery a most excellent means of checking the disease, if we cannot establish a complete cure. Frequently the cautery seems to be quite as effectual as is total extirpation. We are certainly not to recommend the cautery in place of extirpation if the latter can be accomplished.

When the disease is confined to the os uteri and there are objections to the removal of the entire uterus, it is well to do a high amputation. It must, however, be understood that extirpation is ideal, and anything else is a poor substitute.

It is not within the province of this paper to go into details regarding the methods of removing a cancerous uterus. Sometimes it is advisable to perform the operation by the abdominal route, in order that we may remove a larger field of infected tissue. Usually, however, we may do an ideal operation by the vaginal method.

When it is necessary or advisable to resort to the cautery, the sharp spoon curet should be first used, in order to remove all the loose sloughing tissues.

This brief paper is written for the sole purpose of urging early operative measures in all doubtful cases, unless there are good reasons for delay.

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HYSTERIA: ITS PROTEAN MANIFESTATIONS AND TREATMENT.

By John Punton, Kansas City.

In the vast domain of medical literature perhaps no malady has contributed more voluminously to its bulk than that which forms my theme. From its extreme antiquity and obscure nature and character, hysteria has ever proven a fruitful field for doubt and speculation. From the days of Hippocrates even until the present time undoubtedly the greatest conundrum in practical medicine is a satisfactory explanation for all the varied phenomena belonging to the nervous affections we term hysteria.

It is not the purpose of this paper to attempt to solve the manifold problems connected with its pathogony, or offer any new theory or device concerning its abstruse character, but simply to emphasize a few facts in regard to the origin of its peculiar protean manifestations that I fear are sometimes overlooked in its general care and management. For centuries the dominant idea in regard to its pathogenesis recognized the uterus as the seat of the affection. This fanciful womb doctrine was taught and believed by Hippocrates and Plato, and has since reigned supreme until within a comparatively recent period. With slight variations of expression, this false uterine pathology served the purpose of so-called medical science for over two thousand years, and even to-day, because of its sexual manifestations satisfies the notions of the laity as well as the more ignorant of our profession. Moreover, it was formerly believed to be confined to the female sex, but in recent years it has been discovered that men are quite frequently found suffering from hysteria, and as it occurs at almost any age and under all conditions

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and circumstances, it is recognized to be no respecter of persons.

It would be a great sacrifice of time for me to attempt to even briefly allude to the numerous nonsensical theories and foolish ideas advanced at different periods in its history by the various writers in explanation of its varied phenomena. Suffice it to say that the neuron theory affords perhaps the most rational hypothesis by which modern medical science explains the marvelous fluctuating character of hysteria. As a result of recent investigation and consequent perfected knowledge of the finer structure of the central nervous system, the consensus of opinion by those most competent to speak declare that hysteria is a psycho-neurosis or an affection of the higher cerebral centers primarily, with secondary involvement of any or all of the functions of the nervous system. Moebius defines it as "a state in which ideas control the body and produce morbid changes in its functions." Lloyd says it is a psycho-neurosis of which the physical symptoms are the most conspicuous, tending to disguise the mental phenomena and to simulate superficially the effects of various diseases." Gowers recognizes it as "a morbid derangement of the higher cerebral centers or loss of the due balance between certain of the higher functions of the brain, with secondary involvement of the lower centers in the brain, spinal cord and sympathetic system." Hysteria is thus recognized as a true mental disease primarily, with secondary involvement of the various functions of the nervous system.

Modern scientific research also demonstrates that hysteria is not, as erroneously implied, a protean affection or false pretense expressed through conceit or knavery of the patient, in which a simulation of all kinds of disease occur, but, on the contrary, it is a genuine malady or disease of the higher cerebral centers, having a distinct morbid entity essentially its own, with well-defined clinical characteristics which may, however, be protean in their manifestations. This,

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therefore, constitutes one of its more important practical elements; and while it may seem at one time by its symptoms to indicate disease of the uterus, bladder or rectum, and at another the liver, stomach, kidney, or indeed any organ or organs of the body, yet, after all, these may be mere protean manifestations of primary impairment of the higher cerebral centers, with secondary involvement of the nervous mechanism governing these various organs.

The study of physiology clearly teaches us that there is a complex interaction or correlation between all parts of the nervous system, the controlling power of which finds their highest expression in the finer cellular mechanism of the brain. All parts of the nervous system, together with their specific functions, are thus found not only to receive, but concentrate their highest attributes in nerve centers, which reside in and form part of the encephalon. The higher inhibitory centers are known to control, increase or augment the functional activity of all the lower nerve centers, together with their specific mechanism of the brain, spinal cord, visceral organs, and, indeed, all parts of the human organism subject to sympathetic innervation. Hence the latter becomes subservient in point of power and influence to the former, which is also greatly intensified in morbid states of the nervous system. Moreover, these higher inhibitory centers are known to be perfected at different rates and degrees in different individuals, and are the latest of all the functions of the nervous system in acquiring their supreme development. Thus it is easy to understand that any defect in an-atomic conformation or physiologic involvement of the functional activity and power of the higher cerebral centers may lead to disorders in the mechanism of any one or all the organs dependent upon their specific influence. This also offers a rational explanation of the wide and varied range of the symptomatology of hysteria, together with its protean manifestations, for its marked feature is ever recognized to be its multiplicity of symptoms and their constant change of degree and form. A fact that needs

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further emphasis, also, is that while the manifestations of hysteria are protean in both degree and form, yet their source of origin is the same throughout its entire course and duration, and can, as already shown, be referred to a primary derangement of the inhibitory centers of the brain, even though at times there be marked subsequent involvement of the somatic organism.

In its diagnosis this fact is sometimes overlooked, and because the symptoms are referred by the patient to certain special visceral or other organs, their true source is thus made obscure or misleading, and the effects are thus taken for the cause and the disease regarded as having its seat in the organs apparently affected. Especially is this true in the anomalous forms of the affection; hence many a case of hysteria is allowed to mature in both degree and form, even though the patient be under constant medical care and attention. Every community has its chronic hysteric invalids which have possibly been treated by numerous physicians for some indefinite disease of the stomach, liver, bowels, uterus, kidney or other organ for a varying length of time without any apparent relief. In such cases the symptoms undoubtedly were misleading and the effects taken for the cause; hence the treatment adopted was both inappropriate and disappointing. Nor is this strange when I state that, contrary to the popular belief, the diagnosis of hysteria at times constitutes the most difficult problem in practical medicine. Of course, in its more common typical clinical manifestations, nothing is easier; but often it presents itself in anomalous forms that puzzle the most expert diagnostician.

In studying the psychologic aspects of hysteria we find the organs which constitute the mind, viz., the intellect, emotion and volition, play an important role in its clinical manifestations, and their morbid action gives rise to an extensive and varied symptomatology which is nothing more or less than the outward expression of an inward unstable physical organization. In the normal mental condition the volitional power in man

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dominates the intellectual and emotional faculties; but in hysteria this order is reversed, the will becoming subservient to the emotions. Moreover, in hysteria the nervous system is more or less dominated by ideas as well as by the emotions, hence the definite conception of a symptom may lead to its occurrence. For instance, the idea of a loss of power in certain muscles may later render it impossible for the patient to will the normal movement of a part; hence paralysis occurs. Again, a definite pain in a part is conceived or thought of, and before very long it may be actually felt by the patient. When ideas are thus conjoined to the emotion, the motive of the patient becomes stronger to yield than to resist the morbid tendency, and the cultivation of symptoms, which at first may be unconscious or involuntary, may then become conscious and intentional. In referring to this, Gowers claims "that those symptoms that are at first merely unresisted may be afterward welcomed, then invited, and at last actually induced or consciously stimulated." This pathogenic influence of idea is seen in all varieties of hysteria and is exceedingly important from a medical standpoint, for, as is well known, hysteric persons are extremely susceptible to certain impressions that render them vulnerable to all forms of morbid suggestibility.

Oversolicitation or frequent examination on the part of the physician in his medical inquiries, or the anxiety of friends to visit the patient in order to ascertain the cause and progress of certain symptoms and the possibility of their results, or the development of other morbid states often unconsciously and unintentionally suggest to the patient certain definite and morbid states that later appear as actualities. The skill and wisdom of the physician is therefore displayed in his apparent indifference to the protean character of the symptoms, for to treat them as they hourly arise would mean, at times, an endless variety of therapeutics.

If hysteria, as already shown, is a true mental affection, involving the physical organism in varying degrees and forms

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of intensity, it follows that its treatment must necessarily take cognizance of both mind and body. To accomplish this successfully it is essential that the physician is allowed the full care and control of the conduct and life of the patient, and this can only be done by removal of his patient from all sources of irritation and indulgence. That their home life, as a rule, furnishes the most fruitful soil for the cultivation and development of both of these etiologic factors is well recognized. Hence, the treatment of hysteria at the home of the patient means absolute failure from the start. Dr. Weir Mitchell, referring to this, says: "It is rare to find hysterics so free from the influence of their surroundings as to make it easy to treat them in their own homes. I have often made the effort to treat them in their own homes, and to isolate them there, but I have rarely done so without promising myself that I would not again complicate my treatment by any such embarrassments." These remarks eminently coincide with my own experience; and I have for some time considered it labor in vain to treat such patients without the enforcement of the principle of isolation away from home. The separation of the hysterics from home, friends, and relatives is often a difficult task, as they cannot perceive the wisdom of such a course, besides the expense. This measure they claim, has the aspect of harshness, as well as being unnecessary; for if it is a question of good nursing, they are amply able to provide this at home, as well as every other comfort. I confess that it is not easy to cope with the many excuses offered, but I contend that the successful issue of the case depends very largely upon the rigid enforcement of the principle of isolation. When this is secured you gain the additional advantage of supplying the requisite amount of rest and exercise, besides the full power belonging to suggestion, and all other therapeutic measures indicated suitable to the case.

As hysteria develops from an abnormal psychical organization, the growth and cultivation of morbid ideas or imperative

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concepts are easily engendered which may be entirely subconscious; hence the patient is often ignorant of the morbid ideation that dominates his every thought, word, and deed. To be effectual, therefore, the psychical treatment must be directed toward the dissolution of this pathologic mentalization, and the substitution in its stead of a healthy mental process. For this purpose the full confidence of the patient must be secured by the physician — a task not always easy — and the peculiar mental traits and characteristics carefully studied, which will also suggest the birth as well as the nature and character of the new idea to be established. The essential qualifications of this newly acquired idea should embody the inspiring influence belonging to hope, progress, and cooperation, with sufficient force and power as to impress upon the mind of the patient the certainty of ultimate recovery. This plan, therefore, embodies an educational scheme, the special object of which is intended to restore to the will its normal control of emotions and intellect, at the same time teaching the patient to become more self-confident, self-dependent, and self-reliant, without which all methods of treatment prove futile.

In the accomplishment of this purpose many agents are employed, the most useful of which, perhaps, are electricity, massage, hydrotherapy, dietetics, and the use of drugs, all of which have their special indications in the treatment of hysteria. As the special uses of these various agents are ably referred to in the text-books on nervous diseases, it is unnecessary for me to enlarge upon them at this time; suffice it to say that the medicinal treatment of hysteria is largely secondary, while surgery is rarely indicated.

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REPORT OF THE COMMITTEE ON NECROLOGY.

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DR. WILLIAM B. ADAMS.

MONTGOMERY CITY, MO.

Dr. W. B. Adams died at his home in Montgomery City on March 6th, 1900. He was born in St. Louis County, October 28th, 1818; he was, therefore, in his 82d year at the time of his death.

During the War of the Rebellion he was a prominent Union man, and at different times was provost-marshal of his district, and enrolling officer with the rank of captain of cavalry.

He was a delegate to the Constitutional Convention in 1865, and prior to that time represented his county in the State legislature and his district in the State senate. Dr. Adams held the distinction of being the first person to receive a diploma from the University Medical College, of St. Louis, Mo., his name coming first on the list of the first graduating class of that college. He was a prominent member of the Linton District Medical Society and of the State Medical Association. He was a man of much learning, and a distinguished physician, and in his death the Missouri Medical Association loses one of its most brilliant and oldest members.

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FLETCHER DINES MOONEY, M.D.

ST. LOUIS.

Dr. Fletcher Dines Mooney was born November 30, 1856, in Springfield, Mo. He was educated at Drury College in his native city, and graduated from the Missouri Medical College.

Dr. Mooney was, at different times, secretary, vice-president and president of the St. Louis Medical Society. He was Clinical Professor of Gynecology in the Missouri Medical College for a number of years, and at the time of his death filled the chair of Abdominal Surgery in the Beaumont Hospital Medical College in St. Louis. He contributed a number of articles to medical literature. He was a member of the Missouri State Medical Association, the St. Louis Medical Society, the American Medical Association, and the American Association of Gynecologists.

Dr. Mooney died November 8, 1897.

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HENRY HODGEN MUDD, M.D.

ST. LOUIS.

Dr. Henry Hodgen Mudd was born in Pittsfield, Ill., April 27, 1844. He was educated at Washington University and graduated from the St. Louis Medical College.

Dr. Mudd was Professor of Clinical Surgery and Special Fractures and Dislocations, and Dean of the Faculty of the St. Louis Medical College and the Missouri Dental College for many years.

He wrote a treatise on Hernia in "Wood's Reference Hand Book of Medical Sciences," a chapter on the Surgery of the Mouth and Tongue in "Dennis's System of Surgery," and an article on Special Fractures and Dislocations in "Park's Surgery by American Authors."

Dr. Mudd was a member of the Southern Surgical and Gynecological Society, the Missouri State Medical Association, the surgical section of the Congress of Physicians and Surgeons, the St. Louis Medical Society, and the Medical Society of the City Hospital Alumni of St. Louis.

He died November 20, 1899.

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J. P. ROTHWELL, A.M., M.D.

MEXICO, MO.

Died at Mexico on the 22d of December, 1898. Deceased was a native of Callaway County, Mo., and came to Mexico in 1863. He was a son of Dr. John Rothwell, a prominent physician of Callaway County.

One of his brothers, Dr. W. Rothwell, was Professor of Theology and Moral Philosophy in the William Jewell College at Liberty, Mo., and another brother, Gideon F. Rothwell, of Moberly, Mo., was a leading lawyer of Randolph County and a member of the Forty-sixth Congress. Qualifying himself in the home schools by private study and as teacher in the district school to enter college, he matriculated at the Missouri State University and was graduated from that university in 1857. During the War of the Rebellion he entered the Southern service; he enlisted in the State Guard under Gov. Jackson's call for troops, and was appointed assistant surgeon of Major Robinson's battalion. After the conclusion of the war he finished his medical studies at the St. Louis Medical College, and graduated from this college in 1863. Dr. Rothwell was a member of the County District and State Medical Societies. He was esteemed by all who knew him for his many noble qualities as a man and as a physician, and in his death the Missouri State Medical Society has lost a valued member.

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THOMAS OSMOND SUMMERS, A.M., M.D.

ST. LOUIS.

Dr. Thomas Osmond Summers was born November 10, 1849, at Charlestown, S. C. He was educated in the Southern University at Greensboro, Ala., where he received the degree of the Master of Arts. He continued his studies in the University of London and the University of Berlin, and also studied theology in Edinburg

Dr. Summers was professor of Chemistry and Physiology in the Southern University and the Vanderbilt University, and at the time of his death he was Professor of Anatomy in the St. Louis College of Physicians and Surgeons. He was appointed as Special Commissioner by the United States Government to study yellow fever conditions in South America in 1879 and served during the yellow fever epidemic in the South in 1878, 1888 and 1897. In 1898 he was again sent by this Government to Santiago di Cuba as yellow fever expert. He served in the Franco-Prussian War and was Brigade Surgeon of the Second Tennessee Volunteers during the Spanish-American War.

Dr. Summers wrote a book on Yellow Fever, "Summers' Yellow Fever" and a "Pocket Anatomy," besides numerous papers, and a work on Physiology. He was editor of the *Florida Medical Journal*, and later editor of the *St. Louis Clinique*.

He was a member of the American Medical Association, the Missouri State Medical Association, the Tri-State Medical Association, the St. Louis Medical Society, and the St. Louis Academy of Medicine.

He died June 19, 1899.

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